Optical Digital Reference System

Digital Integrated Amplifier

ENGLISH

Owner's Manual

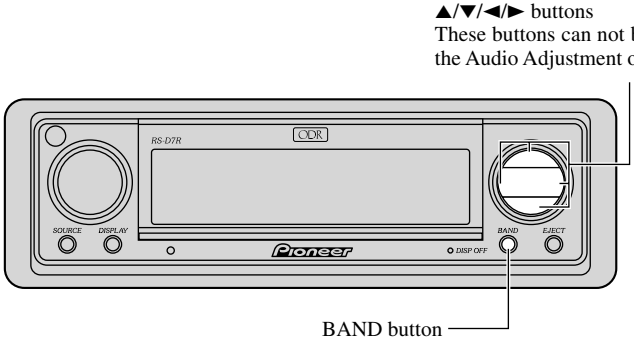
RS-A9

Pioneer

Contents

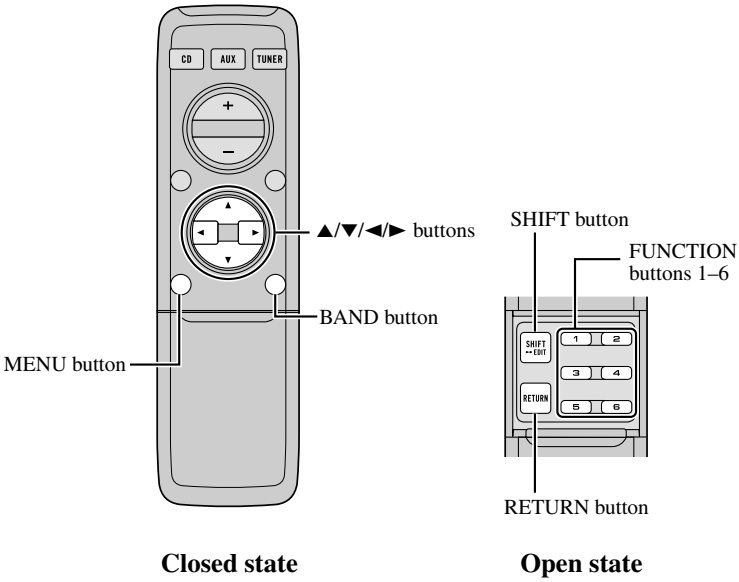
Head Unit (RS-D7R)

This unit can be operated with the combined Head Unit RS-D7R (sold separately).



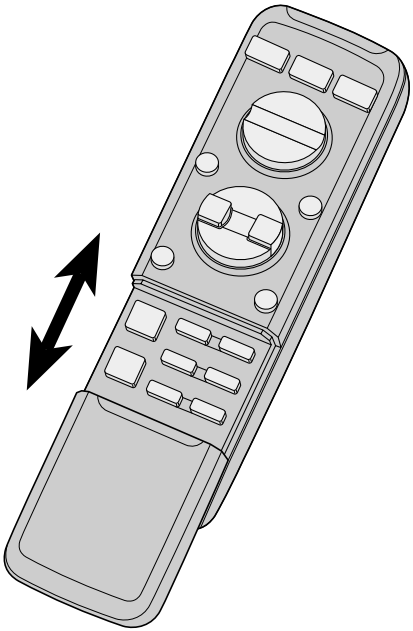
Remote Control (RS-D7R)

Most of all functions can be operated by the remote control.
Opening the cover enables the SHIFT, RETURN and FUNCTION buttons 1–6 inside the remote control. For more details, refer to the page 4.



Opening and Closing the Remote Control Cover

When the remote control is opening the cover enables the SHIFT, RETURN and FUNCTION buttons 1–6 inside the unit.



Menu displays with cover open and closed in this system, the available functions and the menu display vary depending on the condition of the remote control in use.

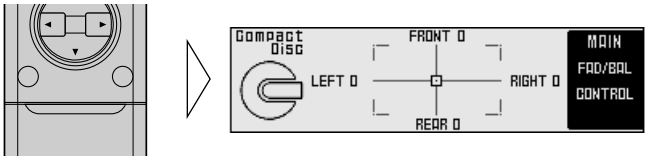
Remote Control	Menu display
Cover closed	Closed state
Cover open	Open State

When the Cover is Closed

Closing the cover of the remote control makes the menu display to the closed state.

Menu display in closed state

Example: Main Menu Screen



Note:

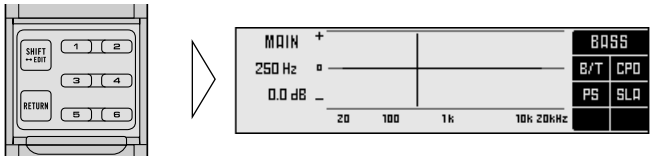
- Menu display in closed state: Current mode and functions which are ON are displayed.

When the Cover is Open

Opening the cover of the remote control makes the menu display to the open state.

Menu display in open state

Example: Main Menu Setting Screen



Note:

- Positions of menu items on the display correspond to the positions of FUNCTION buttons 1–6.
- Menu display in open state: Using FUNCTION buttons 1–6, operable functions are displayed.

When the cover is closed in the middle of operation

- Closing the cover during operation releases the previous operation and returns the menu display to the closed mode.

About This Product

This product is digital integrated amplifier which can be operated with the combined head unit RS-D7R (sold separately). You can operate a number of Audio Adjustment functions with separately sold head unit.

About This Manual

This product features a number of sophisticated functions ensuring superior reception and operation. All are designed for the easiest possible use, but many are not self-explanatory. This operation manual is intended to help you benefit fully from their potential and to maximize your listening enjoyment.

We recommend that you familiarize yourself with the functions and their operation by reading through the manual before you begin using this product. It is especially important that you read and observe the "Precaution" on page 9 and in other sections.

This manual mainly explains the remote control operation. In some functions, you can perform the same operations with the head unit, however, the remote control offers a number of buttons such as SHIFT, MENU, RETURN and FUNCTION buttons 1–6 which are not provided on the head unit. And all of audio adjustment operations can only be conducted with the remote control.

About the Digital Network

A vehicle, unlike the home audio, imposes several constraints upon the quality of reproduced sound, and have the following effects:

- Reflected sounds have strong effects on direct sounds because of the confined space and complex shape within a vehicle. This disturbs frequency characteristics and significantly reduces sound quality.
- The orientation of the sound image becomes unnatural, because speakers may not be installed symmetrically to left and right of the listener, or because speakers are installed in both the front and rear.

This system is equipped with a wide variety of functions that use DSP to create the ideal sound quality and sound image in a vehicle and overcome these constraints on reverberation.

System Resetting

About the System Reset button

If network, equalizer and other audio settings are stored in memory (B1, B2, M1, M2 or M3), you can reset the system without erasing the stored settings. This is also convenient when you want to use previous audio setting after changing the mode or system.

Before system resetting

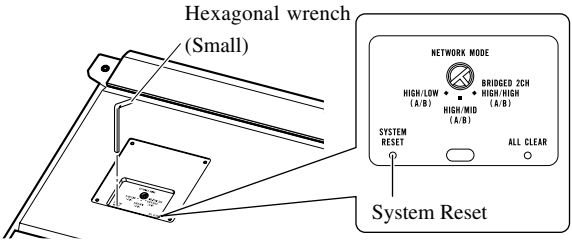
- If this product operates incorrectly, first press the system reset button. If this does not solve the problem, press the all clear button after consulting with your dealer.
- When you press this product's system reset button, also press the RESET buttons of all connected digital amps.
- Press the system reset button when the operation status of this product (RS-A9) is source OFF. If this product is not connected to the power supply or ACC is set to OFF, the system is not reset even if you press the system reset button. Also confirm that the RS-D7R source is OFF.

System resetting

If you change the network mode switch setting or the system, remove this product's top cover and press the system reset button for 1 second or more using the small supplied hexagonal wrench.

Also press the system reset button in the same way when you switch power to this product ON for the first time after purchasing or if this product's built-in microcomputer operates incorrectly.

- **Carefully store the supplied hexagonal wrench.**



All Clear

About the All Clear button

If the unit does not operate normally even after pressing the system reset button, press the all clear button using the small supplied hexagonal wrench. Also press the all clear button when you do not want to use previous audio settings after changing the mode or system. When you press the all clear button, all Network, Equalizer and other audio settings are reset, returning the unit to the factory settings.

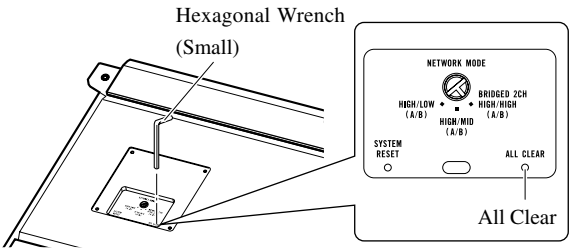
Before all clearing

- When you press the all clear button, all Network, Equalizer and other audio settings are erased. Before pressing the all clear button, be sure to consult with your dealer.
- If this product operates incorrectly, first press the system reset button. If this does not solve the problem, press the all clear button after consulting with your dealer.
- When you press this product's all clear button, also press the RESET buttons of all connected digital amps.
- Connect this product (RS-A9) to the power supply before pressing the all clear button. If the unit is not connected to the power supply, it may not be reset even if you press the all clear button.

All clear

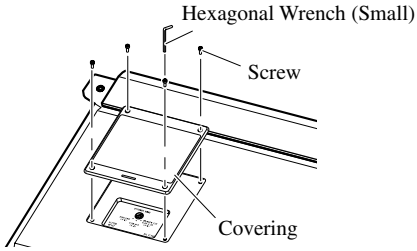
Remove this product's top cover and press the all clear button using the small supplied hexagonal wrench.

- **Carefully store the supplied hexagonal wrench.**



Protecting System Reset button and All Clear button

After completing all settings and adjustments, replace the cover to assure the system reset/all clear buttons are not accidentally pressed.



Precaution

- Keep this manual handy as a reference for operating procedures and precautions.
- Always keep the volume low enough for outside sounds to be audible.
- Protect the product from moisture.
- If the battery is disconnected, the preset memory will be erased and must be reprogrammed.

In Case of Trouble

Should this product fail to operate properly, contact your dealer or nearest authorized Pioneer Service Station.

Audio Menu

This system has the following three Audio Menus:

Main <Main> (page 12)

This carries out Balance Adjustments as well as Bass/Treble Adjustment, the basis for sound quality adjustments. It also sets up and adjusts the Position Selector, which corrects the orientation of the sound image for the listener's position in the vehicle.

Equalizer <Equalizer> (page 20)

This corrects complex frequency disturbance in a vehicle.
The Equalizer function for the component can make fine adjustments of sound quality for each frequency.

Network <Network> (page 31)

This adjusts the reproduced frequency band (cross-over frequency) and the level of each sound range (band) when a multi-amp system is set up. It also corrects unnatural orientation of the sound image caused by the locations of the speakers (using the Time Alignment function), by setting up a delay (time difference) between speakers set up for different sound ranges.

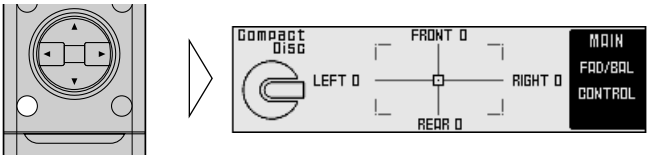
Note:

- The ▲/▼/◄/► buttons on the head unit (RS-D7R) can not be used for Audio Adjustment operations.

Switching to the Audio Menu

When the system is ON, you can adjust the sound quality.

1. **Each press of MENU button selects the desired Audio Menu in the following order:**

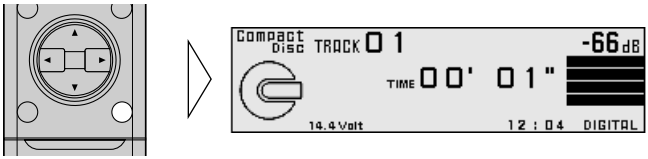


Main (Main Menu) ➞ Equalizer (Equalizer Menu) ➞ Network (Network Menu)

2. **Operate the mode.**

3. **Press the BAND button and cancel the Audio Menu.**

Cancel the Audio Menu to return to the operations screen of the source currently in use.



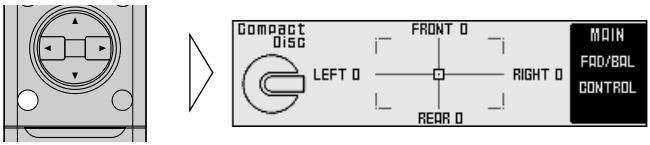
Main Menu

With this menu, you can make the following adjustments.

- Balance Adjustment <FAD/BAL CONTROL> (Closed state)
- Bass/Treble Adjustment <B/T> (Open state)
- Using the Compression <CP> (Open state)
- Listening Position Adjustment <PS> (Open state)
- Source Level Adjustment <SLA> (Open state)

Switching to the Main Menu

- **Press the MENU button and select the Main Menu.**



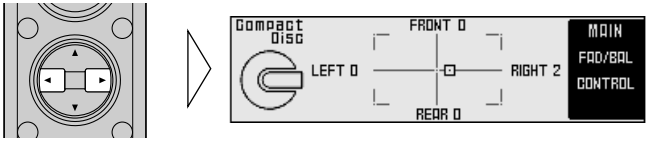
After the title screen, the display switches to the operation screen of the Main Menu. Opening and closing the cover of the remote control (refer to page 4) switches between the open and closed states of the menu display and setting screen.

- **To cancel the Main Menu, press the BAND button.**

Balance Adjustment <FAD/BAL CONTROL> (Closed state)

This function allows you to select a balance setting that provides ideal listening conditions in all occupied seats. This function can be operated with the remote control cover closed.

1. **Close the cover of the remote control (refer to page 4).**
2. **Adjust left/right speaker balance with the ◄/► buttons.**



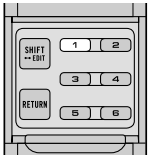
Bass/Treble Adjustment <B/T> (Open state)

It is possible to select one from a choice of four frequencies to becomes the reference when adjusting the bass/treble tone. The frequencies and level adjustment ranges from which selections may be made are as follows:

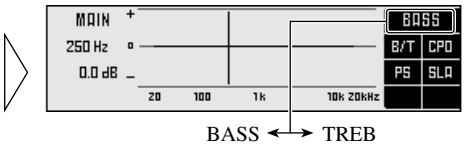
Bass : 63 Hz, 100 Hz, 160 Hz, 250 Hz
Treble: 4 kHz, 6.3 kHz, 10 kHz, 16 kHz
Level adjustment range: –12 dB – +12 dB (1 dB/1 step)

1. **Open the cover of the remote control (refer to page 4).**
   This switches to Main Menu Setting Screen.

2. **Press the FUNCTION button 1.**
   The display switches to Bass/Treble Adjustment Screen.

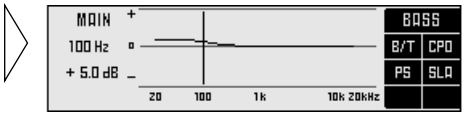


3. **Press the FUNCTION button 1 again to choose bass (BASS) or treble (TREB).**
   Pressing the button switches bass/treble.



4. **Press the ◄/► buttons and select a frequency point.**
   Tune to the desired frequency point.

5. **Press the ▲/▼ buttons and adjust the level.**
   Holding down these buttons continues their operations (with one stop at the central position).



Note:

- Raising the Bass/Treble level too high may result in distortion. Perform Bass/Treble Adjustment to adjust overall sound quality.

Using the Compression <CP> (Open state)

You can reduce the difference between the volume levels of loud and quiet sounds.
The Compression function suppresses loud sounds and boosts quiet sounds to reduce the difference between the volume levels of loud and quiet sounds. It is convenient to use this function when you want to hear quiet sounds more clearly.

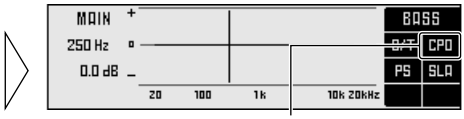
- CP2 (Compression 2) has a larger effect than CP1 (Compression 1).

1. Open the cover of the remote control (refer to page 4).

This switches to Main Menu Setting Screen.

2. Press the FUNCTION button 2 to select the setting.

Pressing the button switches the mode in the following order :
CP0 → CP1 → CP2.



CP0 ⟶ CP1 ⟶ CP2

Adjusting the Listening Position <PS> (Open state)

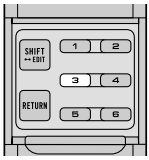
One way to assure a more natural sound is to clearly position the stereo sound image (putting you in the center of the sound field).
The Position Selector function adjusts distance and volume level of sound from each speaker to match seat positions and the number of people in the car, and lets you recall settings at the touch of a button. The result is a natural sound regardless of the seat you are sitting in.

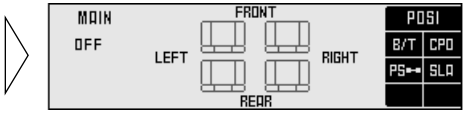
Button	Position
▲	FRONT (Front Seat Left & Right)
◄	FRONT-L (Front Seat Left)
►	FRONT-R (Front Seat Right)

Using the Position Selector <POSI>

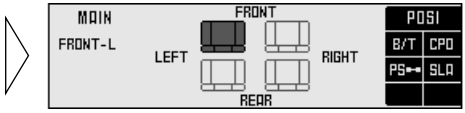
1. **Open the cover of the remote control in the Main Menu (refer to page 4).**
   This switches to Main Menu Setting Screen.

2. **Press the FUNCTION button 3.**
   The display switches to Position Selector Screen.

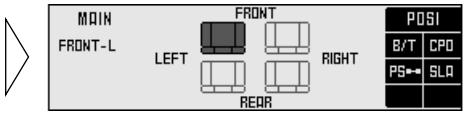




3. **Press the FUNCTION button 3 again to turn the Position Selector function ON.**



4. **Press one of buttons ◄/►/▲ and select the desired position.**
   Set up the position to match the position of the listener in the car.



Experimenting with other positions

- The position is normally designed to match the listener's position in the car. However, other positions may prove to be more effective, depending on the model of the car and the location of the speakers. Compare the sound and choose the position in which the sounds are most natural.

Fine Tuning the Position

You can finely adjust the differences in distance and sound levels for the position selected with the Position Selector function. Make adjustments using both methods to match the location of the speakers and the shape of your vehicle until you achieve more natural sound imaging.

Difference in distance adjustment range: 0.0 - 192.5 cm (0.77 cm/1 step)

The larger the difference in distance, the sooner sound from the speaker reaches your ears, so the speaker seems to move closer. Consequently, the sound image moves in the direction in which the value for the difference in distance is larger.

Adjustment range in the difference in sound levels (LEV): 0 — –30 dB (1dB/1step)

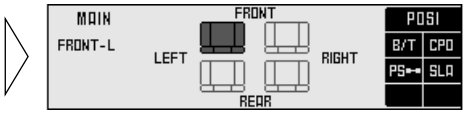
The smaller the level, the lower the sound volume output from the speaker, giving the listener the feeling that the speaker is moving further away. The sound image thus moves in the direction in which the value for the difference in sound levels is closer to 0.

Note:

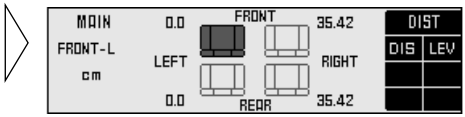
- Fine tuning can be conducted separately for each position.
- The values set after fine tuning are stored into memory as the values for the position. When the position is next called up, the fine tuning values are recalled.

1. **Use the Position Selector function and select the position.**

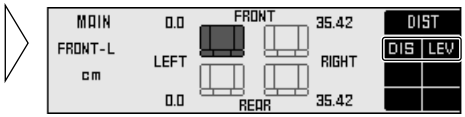
   Example: When selecting FRONT–L



2. **Press the FUNCTION button 3 for two seconds and switch to Position Fine Tuning Screen.**



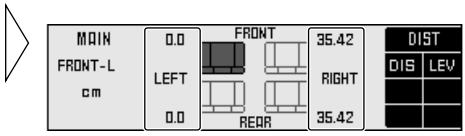
3. **Press FUNCTION button 1 or 2, and select to adjust difference in distance or difference in sound levels.**



Continued overleaf.

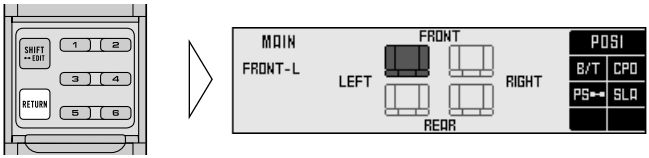
4. Press the ◄/► buttons to correct the position of the sound image.

Holding down these buttons continues their operations (during the difference in distance tuning, holding down the button moves the distance 1.54 cm/1 step).



5. After tuning has been completed, press the RETURN button to cancel the Position Fine Tuning Screen.

The values are stored in memory and the display returns to Position Selector Screen.



Points concerning fine tuning

- While listening to vocals, adjust the distance to position the vocal sound image naturally to the front.

Effective distance Adjustment Using the Position Fine Tuning function

— Relation to Time Alignment Adjustment function —

The distance between the listening position and each speaker can be tuned using either of two methods.

Time Alignment Adjustment function of the Network Menu (page 33)

The distance between the listening position and each speaker of each band (high, mid, low and subwoofer) can be adjusted for the left and right speakers.

Adjustment of difference in distance with the Position Fine Tuning function

Overall adjustment is performed for left and right speakers regardless of the band. The same adjustments are made for high, midrange, low and subwoofer bands.
Combine the two methods to ensure the position of the sound images are set up more effectively.

1. **Adjust the distance from each speaker using the Time Alignment Adjustment function of the Network Menu (refer to page 33).**

2. **Adjust the overall distance balance between the left and right speakers using the Position Fine Tuning Function.**

   Use the set values for the Time Alignment Adjustment function to fine tune the overall balance of the sound image positions.

3. **Use the Position Fine Tuning Function to adjust the overall level balance between the left and right speakers.**

   Adjust the difference in sound levels between the left and right speakers so that the sound image is in the front.

When you have made adjustments for difference in distance using the Position Fine Tuning function

- After adjusting the difference in distance with the Position Fine Tuning function and switching to the Time Alignment Adjustment Screen, the values set using the Position Fine Tuning function are added to the values previously set using the Time Alignment function and the sum values are displayed.
- If you want to store the displayed values in memory as new values for the Time Alignment function (standard values for the Position Fine Tuning function), adjust any on value again by pressing the ▲/▼ buttons. The displayed values are stored in memory and the difference in distance set with the Position Fine Tuning function is reset and returned to 0.

When the distance has been using the Time Alignment Adjustment function

- Adjustment of the difference in distance using the Position Fine Tuning function is based on time alignment adjustment delay time. When you have set a delay time using the Time Alignment Adjustment function, since the standard value is changed, the difference in distance set using the Position Fine Tuning function is reset and returned to 0.

Source Level Adjustment <SLA> (Open state)

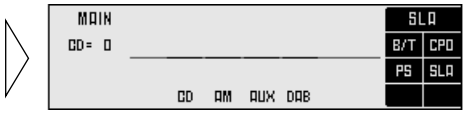
The SLA (Source Level Adjustment) function prevents radical leaps in volume level when switching between sources. Settings are based on the FM volume level, which remains unchanged.

1. **Compare the FM volume with the volume of the other source (refer to RS-D7R (sold separately) Owner's Manual).**

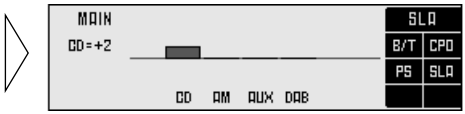
2. **Press the MENU button to switch to the Main Menu.**

3. **Open the cover of the remote control switches to Main Menu Setting Screen.**

4. **Press Function button 4 on MAIN Menu Setting Screen.**
   The display switches to SLA Adjustment Screen.



5. **Increase or decrease the level with the ▲/▼ buttons.**
   The display shows "+4" – "–4".



Note:
- Since the FM volume is the control, SLA is not possible in the FM modes.
- The MW/LW volume level, which is different from the FM base setting volume level, can also be adjusted similar to sources other than tuner.
- The head unit's CD player, Multi-CD player and DVD player are set to the same volume adjustment setting automatically.
- AUX, External 1 and External 2 are set to the same volume adjustment setting automatically.

About the Equalizer Menu

One important factor for creating quality sound is the correction of disturbances in frequency characteristics within the complex shape of a vehicle interior.
Reflected sounds have a strong effect on direct sound in a vehicle because of the vehicle's shape, the confined space, absorption of sound by the seats and reflection from the windows. All these cause disturbances in the frequency characteristics. Such disturbances will be apparent as reduced sound quality.

Any one of two kinds of digital equalizer is used under this system, depending upon the configuration of the audio system. The digital equalizer adjustment corrects disturbances in frequency characteristics and creates a smooth sound quality.

- As installation conditions differ for the left and right speakers, different corrections must be made for each. All two digital equalizers are able to correct the left and right speakers separately.

31 Band Graphic Equalizer (31B-GEQ)

You can perform 31-band (1/3 octave intervals) level adjustments for left and right channels independently or combined to achieve the optimum acoustic characteristics for the environment in your vehicle.

3 Band Parametric Equalizer (3B-PEQ)

You can perform 3-band level adjustments for left and right channels independently or combined, adjusting the levels of a choice of 31 frequencies (1/3 octave intervals) as desired. You can also adjust the inclination of the equalizer curve (Q factor) of each of the bands.

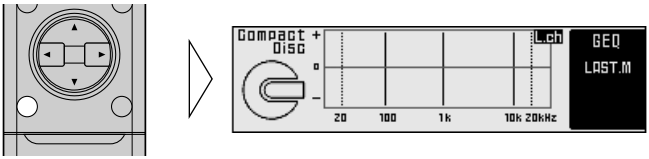
Equalizer Menu

With this menu, you can make the following adjustments.

- Recalling the Equalizer Curve (Closed state) (Refer to page 46.)
- Adjusting the 31 Band Graphic Equalizer <FINE> (Open state)
- Adjusting the 3 Band Parametric Equalizer <PEQ> (Open state)
- Flat function <FLT> (Open state)
- Clear function <CLR> (Open state)
- Memory functions of Adjusted Equalizer Curves (Open state) (Refer to page 43.)

Switching to the Equalizer Menu

- **Press the MENU button and select the Equalizer Menu (refer to page 10).**

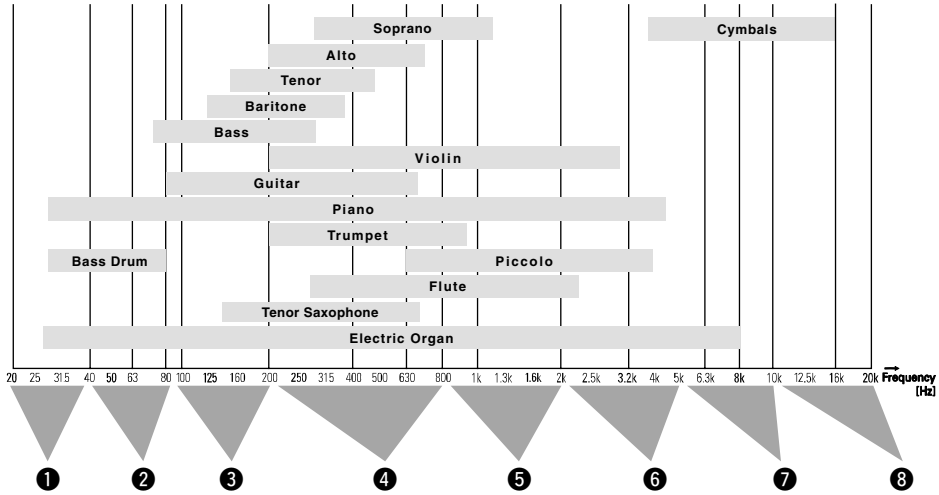


After the title screen, the display switches to the operation screen of the Equalizer Menu. Opening and closing the cover of the remote control (refer to page 4) switches between the open and closed states of the menu display and setting screen.

- **To cancel the Equalizer Menu, press the BAND button.**

Relation Between Frequency Characteristics and Sound Quality

Sound quality generally has the following characteristics, depending on the frequency. Refer to these characteristics when making adjustments.



❶ This sound range feels almost like pressure on the ears of the listener, particularly if the sound is too strong.
❷ In this range, the listener feels the heavy bass. This is also the range in which the impact of the sound is felt in the body. Excessive sound in this range will impair the clarity of the overall sound.
❸ The sound range required for bass. A lack of sound in this range results in a weak bass impact, while excessive sound will muffle the overall sound. A clear reproduction lends depth to the overall sound.
❹ This is the sound range in which the sound signals are most dense and where the sound outline is created. A lack of sound in this range results in a lack of warmth. Excessive sound dims clarity.
❺ The sound range required for the core of the sound. A lack of sound in this range weakens the core. An important range for keeping the overall sound quality in balance.
❻ In this range, the sharp, expansive sounds of the brass and electric guitar are felt. However, excessive sound in this range is tiring on the ears.
❼ This sound range adds color and gaiety to the overall sound. A lack in sound in this range will result in a muffled overall sound, while excessive sound will enhance the metallic aspects.
❽ This range is required for the glamorous sound of the cymbals. However, this range does not contain the basic frequencies of almost all the instruments. Therefore, if the sound in this range is lacking somewhat, the overall sound quality will not deteriorate markedly.

The points when adjusting the equalizer curve

- Take the recreated frequency bands of the speakers into consideration when adjusting. For example, when a speaker with a band between 80 Hz and 4 kHz is connected, adjusting the level in 50 Hz or 10 kHz will have no effect.
- Balancing the bass and treble is recommended. The bass tends to be lacking when no subwoofer is connected. Adjust the treble to a lower volume to match the weaker bass and create a well-balanced sound.
- Noises coming from the road make the bass seem weak while driving. If the level is below 100 Hz, adjust to a slightly greater level to maintain superb sound balance while driving.
- When the sound is inadequate or excessive, it is recommended to set the levels after checking the frequencies of the sounds in question by changing the peripheral frequencies to the maximum or minimum.

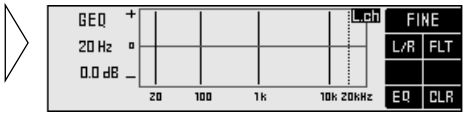
Adjusting the 31 Band Graphic Equalizer <FINE> (Open state)

Adjustable frequency : 20 Hz — 20 kHz (Every 1/3 octaves, total 31 bands)
Level adjustment range: –12 dB — +12 dB (0.5 dB/1 step)

- You can switch between the Left/Right combine mode and Left/Right independent mode at any time. So even when using the Left/Right independent mode, you can switch to the Left/Right combine mode to perform adjustments.

1. Open the cover of the remote control in the Equalizer Menu (refer to page 4).

This switches to Equalizer Menu Setting Screen.



2. Press the FUNCTION button 5 to select the 31-band Graphic Equalizer Mode.

3. Press the FUNCTION button 1 for two seconds and switch between Left/Right independent mode (L/R) and Left/Right combine mode (COM).

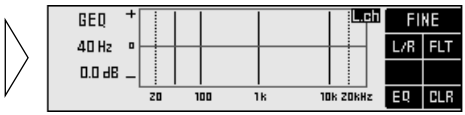
4. Press the FUNCTION button 1 and select left or right channel. (Only for L/R mode.)

Each press the FUNCTION button 1 switches left and right channel.

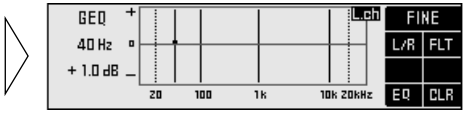
Note:

- Even when using the Left/Right combine mode you can switch to display left and right channels, but adjustments are those performed in the Left/Right combine mode.

5. Press the ◄/► buttons and select the desired band (frequency) to be adjusted.



6. Press the ▲/▼ buttons and adjust the level.



Continued overleaf.

7. Adjust the other bands.

Repeat steps 5 and 6 to adjust to the desired sound.

8. Switch between right and left to set up the equalizer curve.

Repeat steps 4–7 to set up equalizer curves for the left and right speakers separately.

When completing the adjustment

- It is recommended that adjustment settings be stored in memory soon after the adjustments are completed. Refer to page 43 for Memory operations.

Adjusting the 3 Band Parametric Equalizer <PEQ> (Open state)

About the adjustment using the parametric equalizer

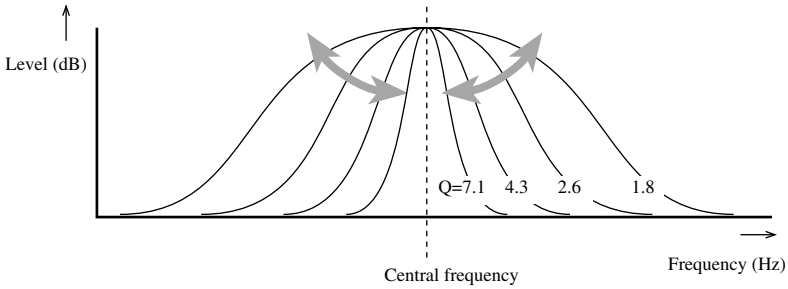
The parametric equalizer can make the following adjustments.

Separate 3 band adjustment for left/right

It is possible to set up the left and right equalizer curves separately. Among the 31 frequencies, three bands (frequencies) each can be selected to serve as the left and right central frequencies, enabling level adjustments.
Frequency point: 20 Hz — 20 kHz (Every 1/3 octave, total 31 points)
Level adjustment range: –12 dB — +12 dB (1 dB/1 step)

Q select function

Q factor (the inclination of the equalizer curve) in each band that serves as the central adjustment frequency can be selected separately.
Set values: 1.8, 2.6, 4.3, 7.1 dB/oct.
The greater the value, the sharper the equalizer curve characteristics.



Setting the equalizer curve

- You can switch between the Left/Right combine mode and Left/Right independent mode at any time. So even when using the Left/Right independent mode, you can switch to the Left/Right combine mode to perform adjustments.

1. Open the cover of the remote control in the Equalizer Menu (refer to page 4).

This switches to Equalizer Menu Setting Screen.

2. Press the FUNCTION button 5 to select the 3-band Parametric Equalizer Mode.

3. Press the FUNCTION button 1 for two seconds and switch between Left/Right independent mode (L/R) and Left/Right combine mode (COM).

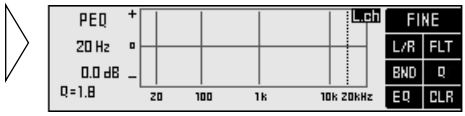
4. Press the FUNCTION button 1 and select left or right channel. (Only for L/R mode.)

Each press the FUNCTION button 1 switches left and right channel.

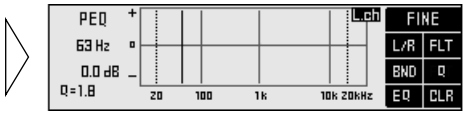
Note:
- Even when using the Left/Right combine mode you can switch to display left and right channels, but adjustments are those performed in the Left/Right combine mode.

5. Press the FUNCTION button 3 and select the desired band to be adjusted.

Each press the FUNCTION button 3 switches to next band.

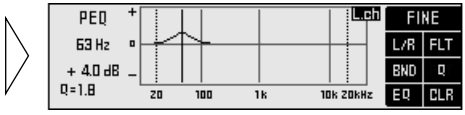


6. Press the ◄/► buttons and select the desired frequency to be adjusted.



Note:
- You cannot set the intervals of the adjacent 2 bands to less than 1/3 of an octave.

7. Press the ▲/▼ buttons and adjust the level.



8. Press the FUNCTION button 4 and adjust the Q factor (inclination of equalizer curve).

Press the button to change the values in the following order. Set up the desired Q factor :
1.8 → 2.6 → 4.3 → 7.1 (dB/oct.)

9. Adjust other bands.

Repeat steps 5 – 8 to adjust the desired sound.

10. Switch between left and right to set up the equalizer curve.

Repeat steps 4 – 9 to set up the equalizer curves for the left and right speakers separately.

A convenient way to set up equalizer curves

- Store in the base memory, an equalizer curve, set in such a manner that the sound field in the car becomes flat, and adjusted to the frequency characteristics unique to your car. (It is recommended that adjustments be made after the dealer has taken measurements.) After recalling the base memory, making adjustments to suit your preference allows rapid creation of a well-balanced curve. See page 43 for memory operation.

Checking the equalizer effects

- Use the flat function to make the adjustment while confirming the effects. (See page 29.)

Equalizer adjustment for the subwoofer

- The equalizer adjustment for the subwoofer is conducted in front (when the subwoofer is connected to the front output, adjusting the rear has no effect).

On completing adjustment

- Storing the equalizer curves into memory soon after completing adjustment is recommended. See page 43 for memory operations.

The Flat function <FLT> (Open state)

— Common to 31B-GEQ and 3B-PEQ —

The adjusted equalizer curve can be temporarily returned to its prior status before making the adjustment (all levels are 0 dB), using the Flat function.
This is convenient for checking the effects of the adjusted equalizer curve.

1. **Open the cover of the remote control in the Equalizer Menu (refer to page 4).**

   This switches to Equalizer Menu Setting Screen.

2. **Press the FUNCTION button 2 switches the Flat function ON/OFF.**

   "FLT" is displayed when the Flat function is ON.

Note:

- Pressing FUNCTION button 2 for 2 seconds or more lets you make the equalizer curve for the currently selected mode flat. When in the Left/Right independent mode, the equalizer curves for the left and right channels are made flat independently.
- When the Flat function is ON, the Equalizer Adjustment or Memory operations of the Equalizer curve can not be conducted.

The Clear function <CLR> (Open state)

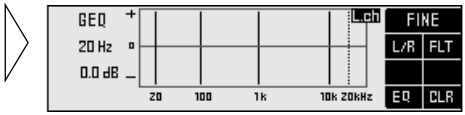
— Common to 31B-GEQ and 3B-PEQ —

The CLEAR function lets you clear the equalizer curve currently being adjusted to return it to its initial status (when all levels are 0 dB). This is convenient when you want to readjust an equalizer curve.

1. **Open the cover of the remote control in the Equalizer Menu (refer to page 4).**

   This switches to Equalizer Menu Setting Screen.

2. **Press the FUNCTION button 6 for two seconds to clear the equalizer curve.**



Note:

- The CLEAR function operates separately for the 31-band graphic equalizer and the 3-band parametric equalizer.
- The CLEAR function simultaneously switches ON for left and right equalizer curves. (It cannot be used to clear just the left or right channel.)

What is the Multi-Amp System?

The multi-speaker system reproduces each frequency band (high, mid, low and ultrabass-ranges) through its own exclusive speaker unit. The multi-amp system provides an exclusive power amplifier for each speaker unit.

There is only limited space in a vehicle for installing speakers, and it is difficult to install large-diameter speakers in a door or on the dashboard and get high sound quality. To overcome this problem, tweeters (high-range) are sometimes installed in the dashboard in order to move the sound image upwards, or the subwoofers are installed in the rear tray in order to improve bass and ultrabass reproduction. Thus, using a multi-speaker system can correct imbalances in the sound image and significantly improve the total sound quality.

The multi-amp system offers the following features, allowing direct operation of the exclusive speaker unit for each frequency range by an exclusive power amplifier.

- It is possible to reduce the modulation distortion rate since high-range signals are not effected by strong signals in the low range.
- As it is possible to select amplifiers and speakers to suit the characteristics of each frequency range, the load on each unit is reduced, ensuring optimum performance.

Under the multi-amp system, it is necessary to divide the audio signals into each frequency range (band) and strictly control the set up conditions, using the network.

Under this system, the audio unit incorporates a network. The following adjustments can be conducted within the vehicle.

- Time Alignment Adjustment function : adjusts for the difference in the distance between the listener and each speaker unit.
- Filter function : sets up a low pass filter and high pass filter to decide the reproduced frequency band, the level and the phase of each speaker unit.

As the audio signals are processed in the form of digital signals when the network is working, the sound characteristics that best fit the vehicle interior may be created without any deterioration in sound quality.

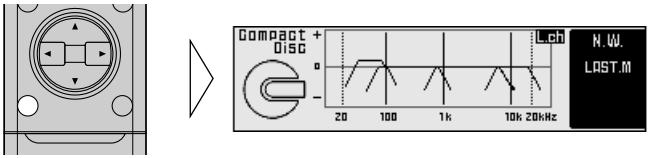
Network Menu <N.W.>

With this menu, you can make the following adjustments.

- Time Alignment Adjustment <T.A.> (Open state)
- Filter Adjustment <FTR> (Open state)
- Switching between Linear Phase Characteristics/Minimum Delay Phase Characteristics (LIN) (Open state)
- Memory functions of Adjusted Network (Open state) (Refer to page 43.)

Switching to the Network Menu

- **Press the MENU button and select the Network Menu (refer to page 10).**



After the title screen, the display switches to the operation screen of the Network Menu. Opening and closing the cover of the remote control (refer to page 4) switches between the open and closed states of the menu display and setting screen.

- **To cancel the Network Menu, press the BAND button.**

If adjustments are difficult

- Adjusting the Network requires technical skills and knowledge of the amplifiers and speakers installed in the system. Consult your dealer from which the products were purchased if adjustments are difficult.
- When adjustments have already been made at your dealer, the optimum setup for vehicle's particular interior has already been installed in the memory. In this case, recall the corresponding memory for use (refer to page 46).

When completing the adjustment

- It is recommended that adjustment settings be stored in memory soon after the adjustments are completed. Refer to page 43 for Memory operations.
- After completing the network adjustments, adjust the overall balance of the sound image by using the Position Fine Tuning function of the Main Menu as necessary (refer to page 15).

Time Alignment Adjustment <T.A.> (Open state)

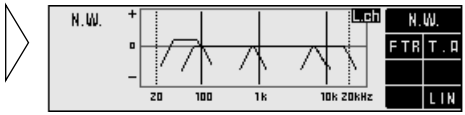
In the vehicle, the different speaker units are at widely differing distances from the listener. The sounds from the speakers therefore reach the listener at different times. When a multi-amp system is set up, this causes different delays for each frequency band (high, mid, low and ultrabass-ranges), marring the position of the sound image and the overall balance and disturbing the frequency characteristics.

The Time Alignment Adjustment function is able to synchronize the arrival times of the different sounds by delaying the output of signals from the closest speaker units.

Switching to the Time Alignment Adjustment Mode

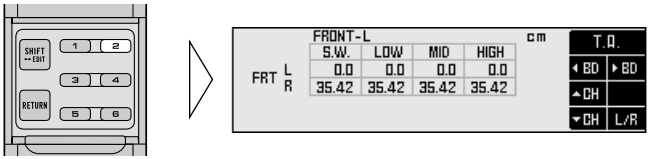
1. **Open the cover of the remote control in the Network Menu (refer to page 4).**

   This switches to Network Menu Setting Screen.



2. **Press the FUNCTION button 2.**

   The display switches to Time Alignment Adjustment Screen, allowing time alignment adjustment.



Measuring the Distance to be Corrected (Delay Time)

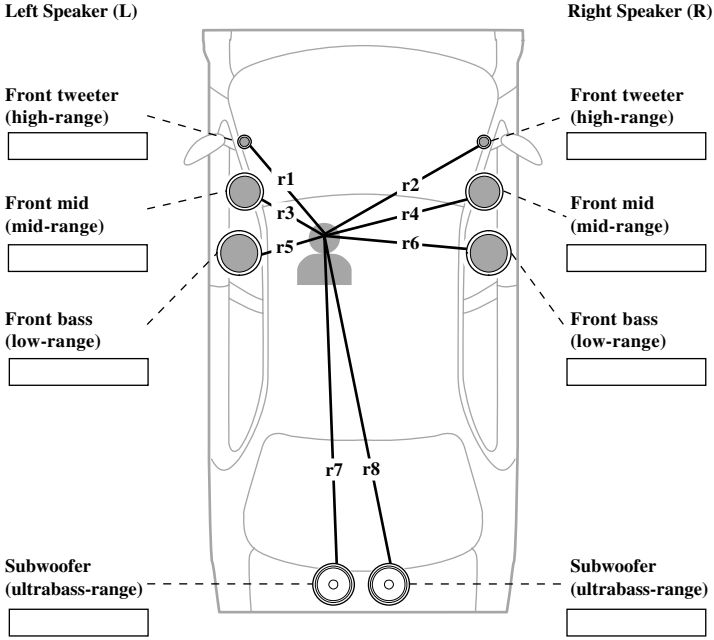
It is necessary to calculate the delay time to correct the time differences between speaker units. In order to adjust the Time Alignment Adjustment function more easily, this System allows the delay time to be set up by simply inputting the difference in the distance between speaker units (the distance to be corrected). (The delay time will be automatically calculated by this system.)

Although the distance from each speaker unit varies depending on the position of the listener, the first set up is made for the driver's seat. If the set up has been made for the driver's seat, the optimum delay time for the listener's position can be set up by simply switching the Position Selector function (refer to page 15) to the listening position. (This System automatically calculates and sets up the optimum delay time for each position.)

Example: making corrections for the driver's seat in a left-hand drive vehicle

- **Measure the distance between the head of the listener, when sitting in the driver's seat, and each speaker unit.**

Note:
- The unit of distance must be centimeters.



Note:
- It is recommended that the boxes be filled in as the measurements are made, as this information may prove useful at a later date.
- Measure the distances to be corrected in the same manner for other systems than those used in the above example.

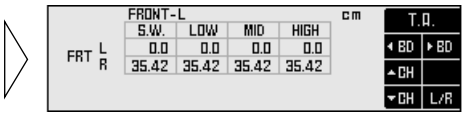
Inputting the Distance to be Corrected (Delay Time)

Scope of adjustment: 0 – 192.5 cm (0.77 cm/1 step)
(S.W.: 0 – 385 cm (1.54 cm/1 step))

1. **Open the cover of the remote control in the Network Menu (refer to page 4).**
   This switches to Network Menu Setting Screen.

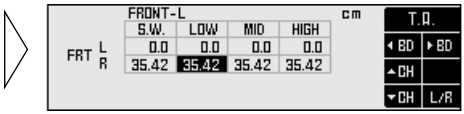
2. **Press the FUNCTION button 2.**
   The display switches to Time Alignment Adjustment Screen, allowing time alignment adjustment.

3. **Press the FUNCTION button 6 and select the driver's seat (position).**
   Press the buttons to switch between "FRONT-R" and "FRONT-L". Select the position when measuring the distance to be corrected as shown on the page 34.

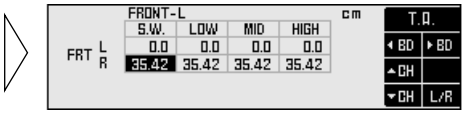


Note:
- The correct distance can not be input unless these operations are conducted.

4. **Press FUNCTION buttons 3 or 5 and select the speaker channel to input.**
   Press the buttons to switch between left (LEFT) and right (RIGHT).



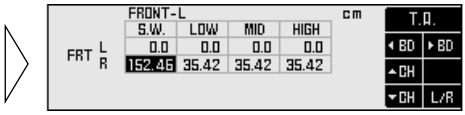
5. **Press FUNCTION buttons 1 or 2 and select the band to input.**
   Each press of the FUNCTION buttons 1 or 2 select the desired band in the following order:



S.W. (ultrabass-range) ↔ LOW (low-range) ↔ MID (mid-range) ↔ HIGH (high-range)

6. Press the ▲/▼ buttons to input the distance to be corrected (delay time).

Input the distance to be corrected, as measured on page 34.
Holding down these buttons continues their operations (during distance tuning, holding down the button moves the distance 1.54 cm/1 step).



7. Carry out time alignment adjustments for the other speaker units.

Repeat steps 4 – 6 to input the distance to be corrected for each speaker unit.

Note:

- Some systems may indicate values for speaker units which are not connected. Verify the composition of the system in order to correctly adjust the bands for the connected speaker units.

Filter Adjustment <FTR> (Open state)

The following adjustments can be made during filter adjustments. Make the appropriate adjustments for the reproduced frequency band and characteristics of the connected speaker unit.

Filter frequency adjustment: Every 1/3 octave
Level adjustment: 0.5 dB/1 step

The cut-off frequencies of the high pass filter (H.P.F.) and the low pass filter (L.P.F.) of each band (subwoofer, low, mid, high) and the reproduction level of each band are set up.

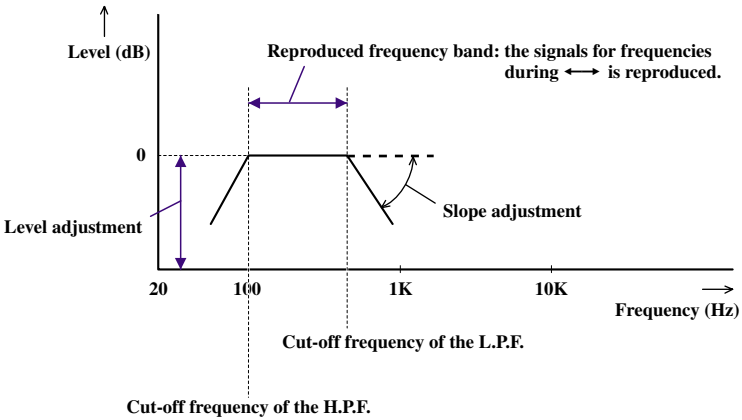
Range	Cut-off frequency of H.P.F.	Cut-off frequency of L.P.F.	Level adjustment range
Subwoofer-range	20 Hz — 100 Hz	40 Hz — 250 Hz	–24 — +10 dB
Low-range	25 Hz — 250 Hz	250 Hz — 10 kHz	–24 — 0 dB
Mid-range	160 Hz — 10 kHz	2 kHz — 20 kHz	–24 — 0 dB
High-range	1.6 kHz — 20 kHz	8 kHz — 20 kHz	–24 — 0 dB

Slope adjustment: PASS, –6, –12, –18, –24, –36, –48, –72 dB/oct. (Every –6 dB/oct. steps)

The slope (inclination of attenuation of filter characteristics) of H.P.F. and L.P.F. is set up.

Note:

- When the slope is set as PASS, the audio signals bypass the filter circuit, cutting out the effect of the filter circuit.
- In order to protect the speaker unit, H.P.F. has no PASS set up for high ranges.



About the H.P.F. and L.P.F.

High pass filter eliminates lower sound ranges (low-range) from the set up frequencies and allows high ranges through.
Low pass filter eliminates upper sound ranges (high-range) from the set up frequencies and allows low ranges through.

About the slope

This value indicates how many dB the signals attenuate when the frequency increases (or decreases) 1 octave (unit: dB/oct.). Increasing the degree of the slope increases the degree of signal attenuation.

Note:
- Setting the slope of H.P.F. and L.P.F. of the low-range as PASS creates a full range setup.

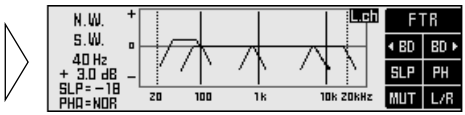
Switching to the Filter Adjustment Mode

1. **Open the cover of the remote control in the Network Menu (refer to page 4).**

   This switches to Network Menu Setting Screen.

2. **Press FUNCTION button 1 on Network Menu Setting Screen.**

   The display switches to Filter Adjustment Screen, allowing filter adjustments.



Using the Mute function (MUT)

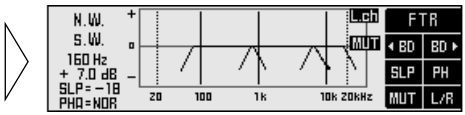
It is possible to turn the Mute function ON/OFF for each band. Turning ON the Mute function stops the sound output for that band. Adjust the filter while turning the Mute function ON/OFF as necessary.

1. **Select the band for which the Mute function is to be turned ON.**

   To select a band, consult “Adjusting the Filter” on the following page.

2. **Press FUNCTION button 5 switches the Mute function ON/OFF.**

   When muting is turned ON the filter curve displayed disappears from the display.



Before making filter adjustments
- When the position is set up for the driver’s seat after adjusting the distance between the listening position and each speaker of the Time Alignment Adjustment function (refer to page 33), it is recommended that filter adjustments be made.
- Store the different filter characteristics into memory, by the listening position set up with the Position Selector function (refer to page 15) or by the source being listened, and switch when necessary. Refer to page 43 for memory operations.

Adjusting the Filter

First, determine the approximate band to be used, taking into consideration the reproduced frequency band and the characteristics of the connected speaker.

1. **Open the cover of the remote control in the Network Menu (refer to page 4).**

   This switches to Network Menu Setting Screen.

2. **Press the FUNCTION button 1.**

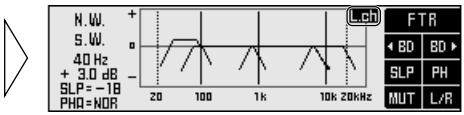
   The display switches to Filter Adjustment Screen, allowing filter adjustments.

3. **Press the FUNCTION button 6 for two seconds and switch between Left/Right independent mode (L/R) and Left/Right combine mode (COM).**

4. **Press FUNCTION button 6 and select left (Left) or right (Right) channel (only for L/R mode).**

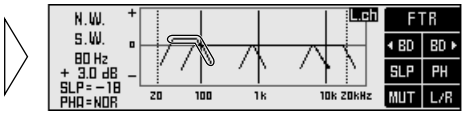
   Each press the FUNCTION button 6 switches left and right channel.

   - Even when using the Left/Right combine mode you can switch to display left and right channels, but adjustments are those performed in the Left/Right combine mode.



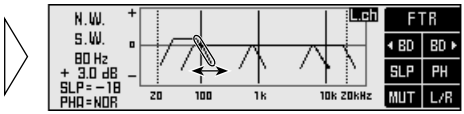
5. **Press FUNCTION buttons 1 or 2 and select the filter to be adjusted.**

   Press the button to switch the band to be adjusted and high pass filter/low pass filter.



6. **Press the ◄/► buttons to set up the cut-off frequency of the selected filter (crossover frequency).**

   Holding down these buttons continues their operations.



7. **Set up the cut-off frequencies of each filter for all the bands.**

   Repeat steps 5 and 6 to adjust each filter so that the band used and crossover frequency are appropriately located.

Important points in adjusting cut-off frequencies

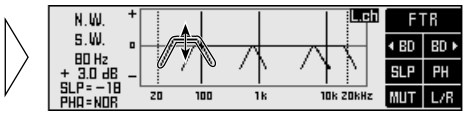
- If the subwoofer is installed in the rear tray, setting a high cut-off frequency of L.P.F. of the subwoofer separates the bass and gives the listener the feeling that the bass is coming from behind. The L.P.F. of the subwoofer is recommended to be set at 100 Hz or below.
- Speakers used for mid and high-ranges are generally constructed to handle a limited level of input compared to low range speakers. If the cut-off frequency of H.P.F. is set lower than necessary, strong bass signals can reach the speaker and may damage it.

Important points in adjusting the level

- The low band, because of its sound frequency characteristics, incorporates the basic frequencies of many musical instruments. It is recommended that the level adjustment of the low band be made first, and then the level adjustment of the mid, high, and subwoofer be made in that order.

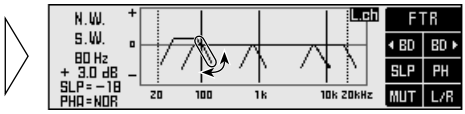
8. Press the ▲/▼ buttons and adjust the level of each band.

Holding down these buttons continues their operations.
Switch to each band and adjust the level in order to create a better overall balance.



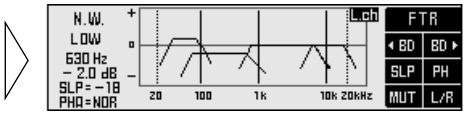
9. Press FUNCTION button 3 and adjust the slope of each filter.

Press the button to change the adjustment values.
The slope can be set up for either the high pass filter or the low pass filter. When setting up, have in mind the adjustments to be made to the next band.



10. Press FUNCTION button 4 and adjust the phase of each band.

Press the button to change between normal (NOR) and reverse (REV).
Set up the one which makes the better link to the next band.



11. Switch between left and right channel to adjust the filter.

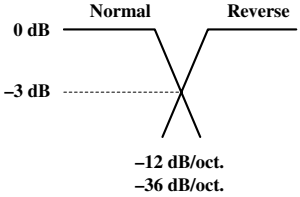
Repeat steps 4–10 to adjust the filters of left and right.

Important points in adjusting the slope

- A decrease in the absolute value of the slope (more gentle inclination) makes the frequency characteristics more susceptible to interference from the next band.
- Increasing the absolute value of the slope (sharper inclination) lessens the connections between bands, giving the listener the impression of hearing separate, unrelated sounds.
- Make adjustments while monitoring the link between bands by outputting all the bands as well as by outputting two neighboring bands only, using the Mute function (refer to page 38).

Important points in adjusting the phase (when using Minimum Delay Phase Characteristics)

- When the values of the slope at the crossover point are set at –12 dB/oct. or –36dB/oct. for both filters, the phase reverses 180˚ in the cut-off frequency of the filter. In this case, setting to reverse improves the connection between sounds.



For better frequency characteristics

- Adjusting the filter together with the equalizer function (page 20) creates a natural sound environment in the car.

Adjusting the subwoofer effectively

- Although the slope of the high pass filter is normally set as PASS, H.P.F. may sometimes reproduce clear and high quality bass rage. In this case, adjust the cut-off frequency to 20 – 40 Hz and adjust the slope to –18 – –72 dB/oct.
- If the subwoofer is installed in the rear tray, setting up the slope of the low pass filter gently (–6, –12 dB/oct.) gives the listener the feeling that the sound dwindles to the rear, with a resultant distortion of the forward sound image position. It is recommended to set the slope at –18 dB/oct. or more and set the cut-off frequency to 100 Hz or below.

Adjusting the low-range effectively

- When the subwoofer is connected and low-ranges are reproduced by small speaker unites such as 10 or less than 13 cm in diameter, setting the low-range H.P.F. as PASS may increase the distortion when strong bass signals enter. Should this occur, set up H.P.F. to avoid interference with the subwoofer.

Adjusting the high-range effectively

- Depending on the speaker units installed, bass signals for the tweeter (about 2 kHz or below) may cause distortion as the high pass filter is being adjusted. If this happens, set a sharp slope of –18 – –72 dB/oct. In this case, choose such settings that the mid-range and tweeter do not become separated.
- The low pass filter is generally set to PASS. However, if the ultratreble band falls harshly on the ear, it is possible to set up a more gentle slope of about –6 dB/oct.

Switching between Linear Phase Characteristics/Minimum Delay Phase Characteristics <LIN> (Open state)

This product (RS-A9) uses an FIR (Finite-duration Impulse Response) digital filter. You can select between the filter characteristics of Linear Phase Characteristics and Minimum Delay Phase Characteristics. This Linear Phase Characteristics/Minimum Delay Phase Characteristics Switching function enables switching to the optimum filter for a source during playback.

Linear Phase Characteristics (Linear Phase: LIN)

A low-pass filter or high-pass filter made with a regular analog filter or IIR (Infinite-duration Impulse Response) filter changes phase characteristics. The Linear Phase Characteristics of this product's FIR digital filter, however, enable reproduction with natural localization and sound field without changing phase characteristics. In general, select Linear Phase Characteristics.

Minimum Delay Phase Characteristics (Minimum Phase: MIP)

Creating precise slope characteristics with Linear Phase Characteristics generates audio delay. As a result, during DVD playback, for example, there is a slight discrepancy between audio and video. In this case, by selecting Minimum Delay Phase Characteristics, this product's FIR digital filter minimizes audio delay to align audio and video.

Switching between Linear Phase Characteristics/Minimum Delay Phase Characteristics

1. **Open the cover of the remote control in the Network Menu (refer to page 4).**

   This switches to Network Menu Setting Screen.

2. **Continue pressing FUNCTION button 6 for 2 seconds or more to switch between Linear Phase Characteristics/Minimum Delay Phase Characteristics.**

   Each time you press the button, the setting switches between LIN (Linear Phase Characteristics) and MIP (Minimum Delay Phase Characteristics).

Memory Functions of Adjusted Audio Menu (MEMO)

This system allows the contents of the adjusted equalizer and network to be stored in memory as follows. The numbers in ( ) represent the numbers of the memory registers to be used.

Note:
- The Equalizer Menu's equalizer curve, and the Network Menu's Time alignment and Filter adjustment are simultaneously stored in memory.

Base Memory (2)

A basic memory in which is stored an equalizer curve with basic correction characteristics and adjusted network settings to assure natural acoustics that take into consideration the unique frequency characteristics of your vehicle.

Custom Memory (3)

Memory for storing your customized equalizer curves and network settings.

Last Memory (1)

Memory that automatically stores the last adjusted equalizer curve and network settings. You can use this, for example, to compare the sound it provides with that provided by the settings in Base memory and Custom Memory. And even if you do not perform memory operation correctly, the last adjustments are stored in memory so you can memorize them again.

The memory operations (storing, recalling, etc.) are carried out using each menu screen. In this manual, the memory operations that are common to all the menus are illustrated mainly using the screens for a 31 band graphic equalizer. Conduct the same operations on other menus.

Note:
- Details of Audio Menu adjustments are stored in this product's (RS-A9) memory. If you press the all clear button on the top of this product (RS-A9), these memorized details are cleared.
- Even if you press this product's (RS-A9) system reset button, details stored in the Base Memory and Custom Memory are not cleared.
- Filter phase characteristics are also simultaneously stored in memory for extra convenience when using different sources and systems.

Switching to Memory Mode

Memory operations are conducted in the memory mode of each Audio Menu.

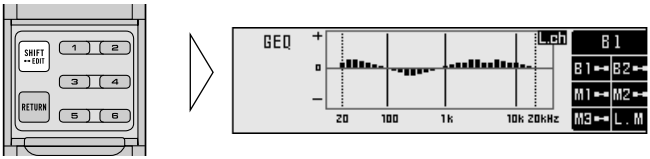
Equalizer Menu

1. **Open the cover of the remote control in the Equalizer Menu (refer to page 4).**

2. **Press the SHIFT button.**

   The display switches to Equalizer Memory Operation Screen for conducting memory operations. Press the button again to return to the previous screen.

Note:
- This operation cannot be conducted when the Flat function of the Equalizer Menu is ON.



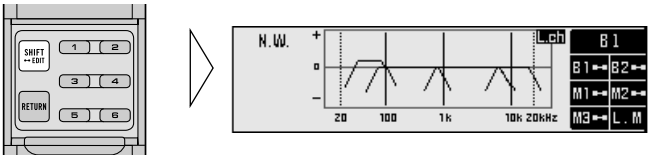
Network Menu

1. **Open the cover of the remote control in the Network Menu (refer to page 4).**

2. **Press the SHIFT button.**

   The display switches to Network Memory Operation Screen for conducting memory operations. Press the button again to return to the previous screen.

Note:
- This operation cannot be conducted when the screen shows Filter Adjustment Screen or Time Alignment Adjustment Screen.



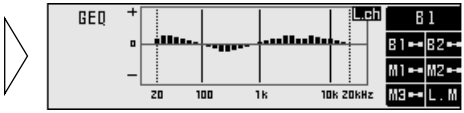
Storing the Adjustment Data in Memory

1. **Adjust each Audio Menu.**

   Equalizer Menu (page 20)
   Network Menu (page 31)

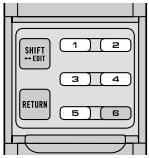
2. **Switch to the memory mode of each menu (refer to page 44).**

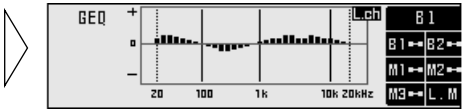
   The display switches to Memory Operation Screen of each menu.



3. **To store in memory, press the FUNCTION button corresponding to the desired memory number for two seconds.**

   Note:
   - When the adjustment data have been stored, the previous data are eliminated and replaced by the new.





4. **Press the SHIFT button to cancel memory mode.**

   The display returns to the previous screen.

To avoid accidentally erasing stored data

- In order to avoid erasing stored data with new data, it is possible to set up a Protect function (refer to page 48).
- Protect function ON/OFF switching is simultaneously performed for both memories. So, for example, if the Protect function is switched ON for memory B1, it is switched ON for both Base Memory B1 and B2. Also, if the Protect function is switched ON for M1, it is switched ON for both Custom Memory M1 and M2. However, the Protect function does not operate for M3 and LM.
- If the Protect function is ON, you cannot store information in that MEMORY button. Store information with another MEMORY button, or cancel the Protect function. Since the Protect function is cancelled after the memory to be cleared is called up, the current adjusted settings are automatically stored in Last Memory.

Recalling Data Stored in Memory

There are two ways to recall data stored in memory.

In Forward/Reverse Order — Functions of Equalizer Menu —

This function can be operated when the cover of the remote control is closed. Stored data can be recalled by moving forwards or backwards through the memory numbers (the numbers of the corresponding FUNCTION buttons).

Note:

- It is not possible to recall the memory in this manner when operating the network menu.

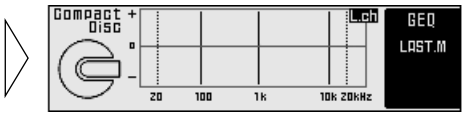
Specifying the Memory Number Directly

This function can be operated when the cover of the remote control is open and the menu displays open state. Stored data can be retrieved directly.

Recalling Memory Using Forward/Reverse Order — Functions of Equalizer Menu —

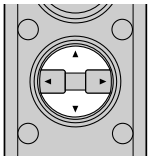
1. **Close the cover of the remote control.**

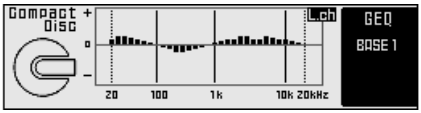
   The menu display switches to closed state.



2. **Press the ▲/▼ buttons to recall the memory.**

   Press these buttons to move forwards or backwards through the memory numbers.

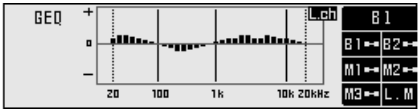




Specifying the Memory Number Directly

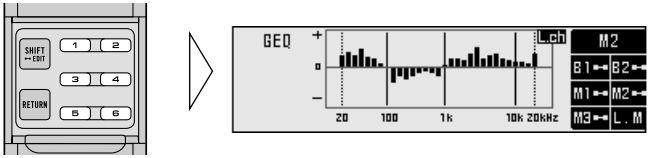
1. **Switch to the memory mode of each menu (refer to page 44).**

   The display switches to Memory Operations Screen of each menu.



2. **Press the FUNCTION button to recall the memory.**

   Press the FUNCTION button which corresponds to the desired memory number.



Memory recall operations on the Equalizer Menu

- When the Flat function is turned ON, it is not possible to recall memory.

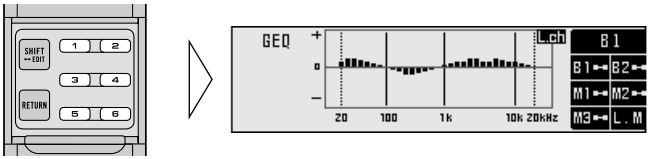
Memory Protect function

In order to avoid accidentally erasing data which have been stored in memory, or to avoid replacing stored data, it is possible to set up a Protect function for the following memory numbers.
When the Protect function is ON, adjustment data storage operations are not accepted.

Note:
- Protect function ON/OFF switching is simultaneously performed for both memories. So, for example, if the Protect function is switched ON for memory B1, it is switched ON for both Base Memory B1 and B2. Also, if the Protect function is switched ON for M1, it is switched ON for both Custom Memory M1 and M2. However, the Protect function does not operate for M3 and LM.

1. Recall the memory (refer to page 46).

Specify the memory number directly to recall the memory.



2. Press the RETURN button for two seconds to turn ON the Protect function.

Press the button again for two seconds to cancel the Protect function.

When turning the Protect function ON/OFF
- Turning the Protect function ON/OFF does not bring up anything on the display.
- When the Protect function is turned ON and the user attempts to store new data in that memory, the "🔒" appears to signify that data storage is not possible.

Inputting the Name

Inputting the name of the person who set up the memory (Equalizer and Network) of the Audio menu, or messages, stores them in the RS-D7R's head unit's memory. The RS-D7R head unit is sold separately.
Switching to each Audio menu brings up the title screen of each menu first. On this title screen of the Audio menu, the stored contents are displayed.

Note:
- A maximum of 20 characters can be stored.
- The same contents are displayed on the title screen of all the Audio menus.

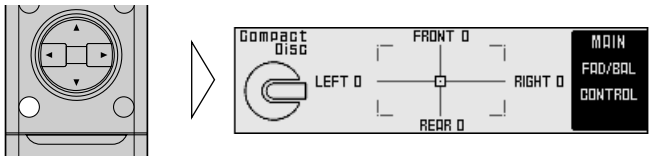
Inputting Characters (Switching to the Edit Mode)

Characters are input in Edit Mode (EDIT).

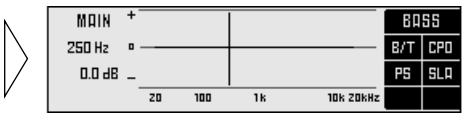
1. Press the MENU button to switch to the Audio Menu.

It is possible to switch to edit mode from all the Audio Menus (Main/Equalizer/Network). Switch to one of these menus.

(Example: Main Menu)



2. Open the cover of the remote control.

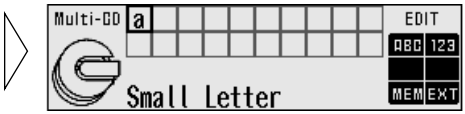


3. Press the SHIFT button for two seconds to switch to Edit Mode.

The display switches to Character Input Screen to allow input of characters.

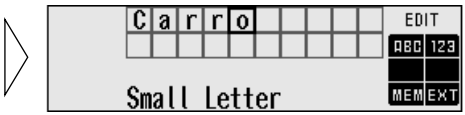
4. Switch the desired character type with FUNCTION button 1.

Each press of FUNCTION button 1 changes the Character type in the following order:
Upper case alphabet (Capital Letter), Numbers and Symbols → Lower case alphabet (Small Letter) → European letters (European Character), such as those with accents (e.g. á, à, ä, ç)



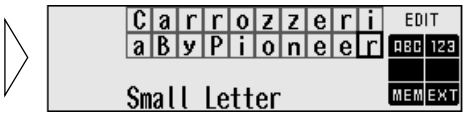
Note:
- You can select to input Numbers and Symbols by pressing FUNCTION button 2.

5. Select letters, numbers and symbols with the ▲/▼ buttons.



6. Move the box left and right with the ◄/► buttons.

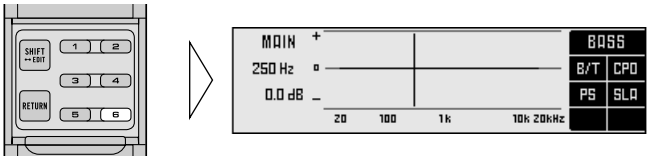
To insert a space, skip the box with the ► button.



Continued overleaf.

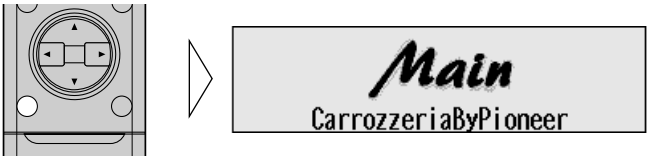
7. When you have completed title input, memorize by pressing the FUNCTION button 5.

8. Press the FUNCTION button 6 or RETURN button and return to the previous mode.



9. The contents stored in memory are indicated on the display.

Switching the Audio Menu displays on the title screen the contents stored in memory.



When removing the car battery

- The separately sold head unit (RS-D7R) stores the name of the person who set up the audio in memory. Removing the car battery clears the memory.

Equalizer

Frequency	B1		B2		M1		M2		M3	
	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
20 Hz										
25 Hz										
31.5 Hz										
40 Hz										
50 Hz										
63 Hz										
80 Hz										
100 Hz										
125 Hz										
160 Hz										
200 Hz										
250 Hz										
315 Hz										
400 Hz										
500 Hz										
630 Hz										
800 Hz										
1 kHz										
1.25 kHz										
1.6 kHz										
2 kHz										
2.5 kHz										
3.15 kHz										
4 kHz										
5 kHz										
6.3 kHz										
8 kHz										
10 kHz										
12.5 kHz										
16 kHz										
20 kHz										

- When using the Left/Right combine mode, record in the “Left (Lch)” column.
- With the 3-band parametric equalizer, input the appropriate frequency.

Network: Filter characteristics

		B1					LIN / MIP	B2					LIN / MIP
		L.P.F.		H.P.F.		Level	Phase	L.P.F.		H.P.F.		Level	Phase
		Frequency	Slope	Frequency	Slope			Frequency	Slope	Frequency	Slope		
LEFT	HIGH												
	MID												
	LOW												
	S.W.												
RIGHT	HIGH												
	MID												
	LOW												
	S.W.												

		M1					LIN / MIP	M2					LIN / MIP
		L.P.F.		H.P.F.		Level	Phase	L.P.F.		H.P.F.		Level	Phase
		Frequency	Slope	Frequency	Slope			Frequency	Slope	Frequency	Slope		
LEFT	HIGH												
	MID												
	LOW												
	S.W.												
RIGHT	HIGH												
	MID												
	LOW												
	S.W.												

		M3					LIN / MIP
		L.P.F.		H.P.F.		Level	Phase
		Frequency	Slope	Frequency	Slope		
LEFT	HIGH						
	MID						
	LOW						
	S.W.						
RIGHT	HIGH						
	MID						
	LOW						
	S.W.						

- When using the Left/Right combine mode, record in the “Left (Lch)” column.

Network: Time Alignment

B1	Position:			
	S.W.	LOW	MID	HIGH
Left (LEFT)				
Right (RIGHT)				

B2	Position:			
	S.W.	LOW	MID	HIGH
Left (LEFT)				
Right (RIGHT)				

M1	Position:			
	S.W.	LOW	MID	HIGH
Left (LEFT)				
Right (RIGHT)				

M2	Position:			
	S.W.	LOW	MID	HIGH
Left (LEFT)				
Right (RIGHT)				

M3	Position:			
	S.W.	LOW	MID	HIGH
Left (LEFT)				
Right (RIGHT)				

Main: Compression

B1	B2	M1	M2	M3

WARNING

- Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the battery wire directly to the car battery positive terminal (+) and the ground wire to the car body.
- Do not touch the amplifier with wet hands. Otherwise you may get an electric shock. Also, do not touch the amplifier when it is wet.
- For traffic safety and to maintain safe driving conditions, keep the volume low enough so that you can still hear normal traffic sound.
- Check the connections of the power supply and speakers if the fuse of the separately sold battery wire or the amplifier fuse blows. Detect the cause and solve the problem, then replace the fuse with another one of the same size and rating.
- To prevent malfunction of the amplifier and speakers, the protective circuit will cut the power supply to the amplifier (sound will stop) when an abnormal condition occurs. In such a case, switch the power to the system OFF and check the connection of the power supply and speakers. Detect the cause and solve the problem.
- Contact the dealer if you cannot detect the cause.
- To prevent an electric shock or short-circuit during connection and installation, be sure to disconnect the negative (–) terminal of the battery beforehand.
- Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Be sure to protect all cables and important equipment such as fuel lines, brake lines and the electrical wiring from damage.

CAUTION

- When installing this unit, disconnect the negative (–) terminal of the battery to avoid the risk of short-circuit and damage to the unit.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around it where they lie against metal parts.
- Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.
- Make sure that wires will not interfere with moving parts of the vehicle, such as the gearshift, handbrake or seat sliding mechanism.
- Do not shorten any wires. Otherwise the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply wire to tap from the wire. The current capacity of the wire will be exceeded, causing overheating.

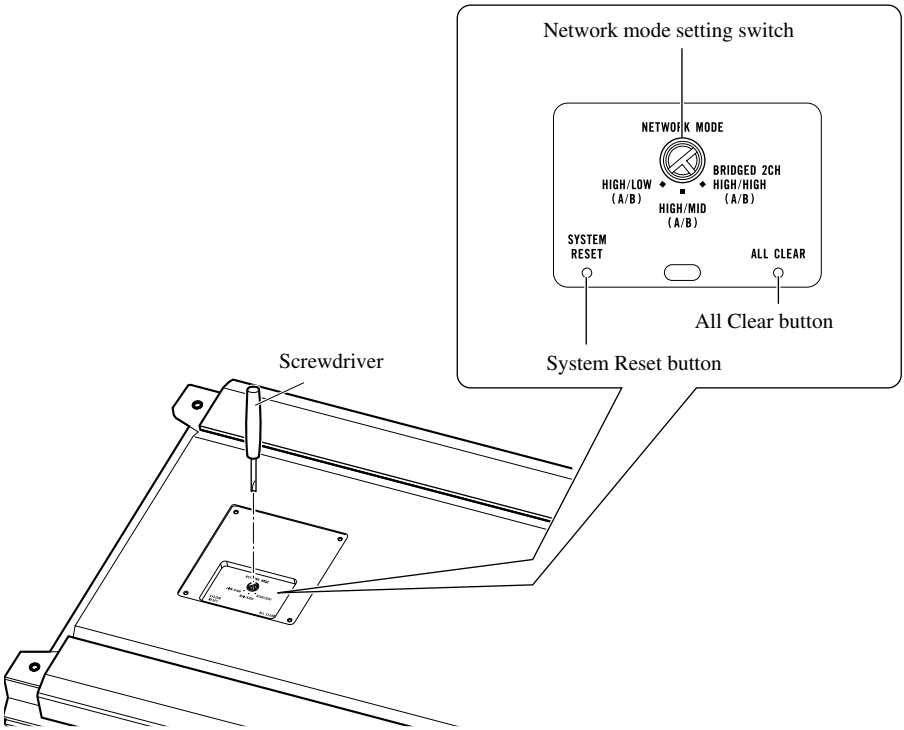
About the setting of this unit

This product features a network mode setting switch. Perform the appropriate settings for the application aim of the speakers connected to this product. If these setting are performed incorrectly, this system will not operate correctly.

Setting the network mode

1. Switch the network mode setting switch with a screwdriver or similar implement.

Switch the network mode setting switch to the appropriate setting for the application aim of the connected speakers.



2. Press the system reset button.

After switching the network mode setting switch, when this product's operation status is source OFF, press the system reset button for 1 second or more. If you do not press the system reset button, setting details will not change.

Note:

- Press the system reset button when the operation status of this product (RS-A9) is source OFF. If this product is not connected to the power supply or ACC is set to OFF, the system is not reset even if you press the system reset button. Also confirm that the RS-D7R source is OFF.

Network Mode setting

Set the Network Mode to match the application aim of the connected speakers.
After completing setting, when this product's operation status is source OFF, press the sysetm reset button for 1 second or more.

HIGH/LOW (A/B) (High/Low Range mode)

Use this setting when this product (RS-A9) is connected to low-range speakers and tweeters. You are also recommended to use this setting if the system comprises just this product (RS-A9).

CH A (A channel): HIGH (Frequency rage: 1.6 kHz - 20 kHz)
You can connect a tweeter.

CH B (B channel): LOW (Frequency range: 25 Hz - 10 kHz)
You can connect a low-range speaker.
You can also use a full-range speaker by adjusting the network frequency.

HIGH/MID (A/B) (High- Mid-Range mode)

Use this setting when this product (RS-A9) is connected to mid-range speakers. You are also recommended to use this setting for a 4-way system comprising this product (RS-A9) and one digital amp (RS-A7).

CH A (A channel): HIGH (Frequency range: 1.6 kHz - 20 kHz)
You can connect a tweeter.

CH B (B channel): MID (Frequency range: 160 Hz - 20 kHz)
You can connect a mid-range speaker.

You can also use a full-range speaker by adjusting the network frequency.

BRIDGED 2CH HIGH/HIGH (A/B) (2-channel High Range mode)

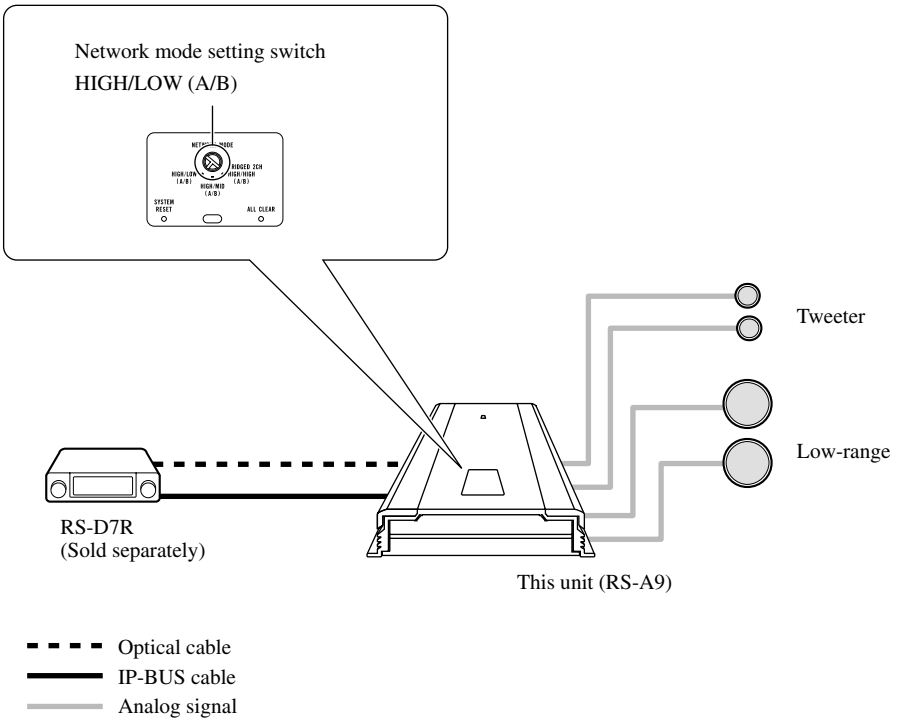
Full-balanced pure digital system (Frequency range: 1.6 kHz - 20 kHz)

Use this setting when this product (RS-A9) is connected to tweeters. You are also recommended to use this setting for a 4-way system comprising this product (RS-A7) and 3 digital amps (RS-A7).
Using this product with bridge connections creates a full-balanced pure digital system. Because one channel's DAC output is inverted, the digital output section through to the speaker output comprises completely of balanced circuitry which dramatically suppresses the generation of common mode noise to assure high S/N ratio and high dynamic range.

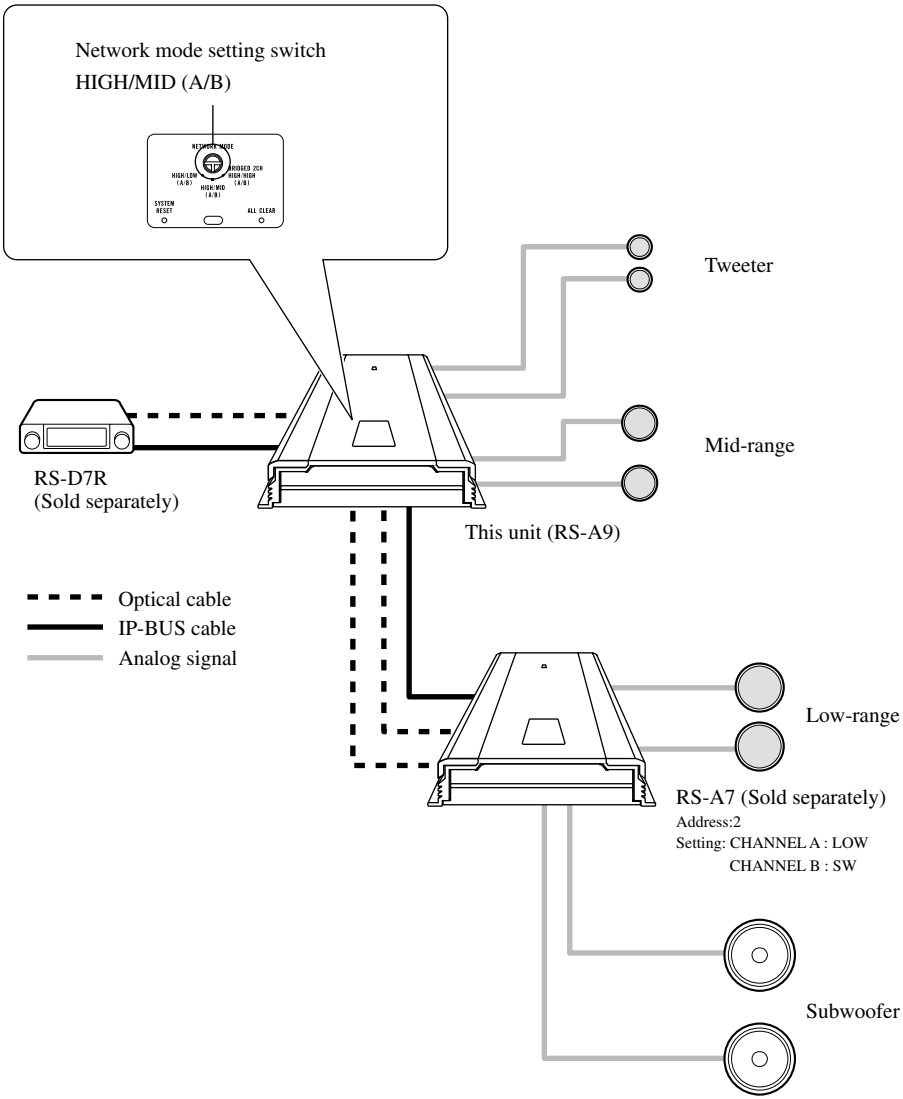
Setting Example

To provide better sound quality, it is recommended you connect digital amps in the order high, mid, low, subwoofer mode.

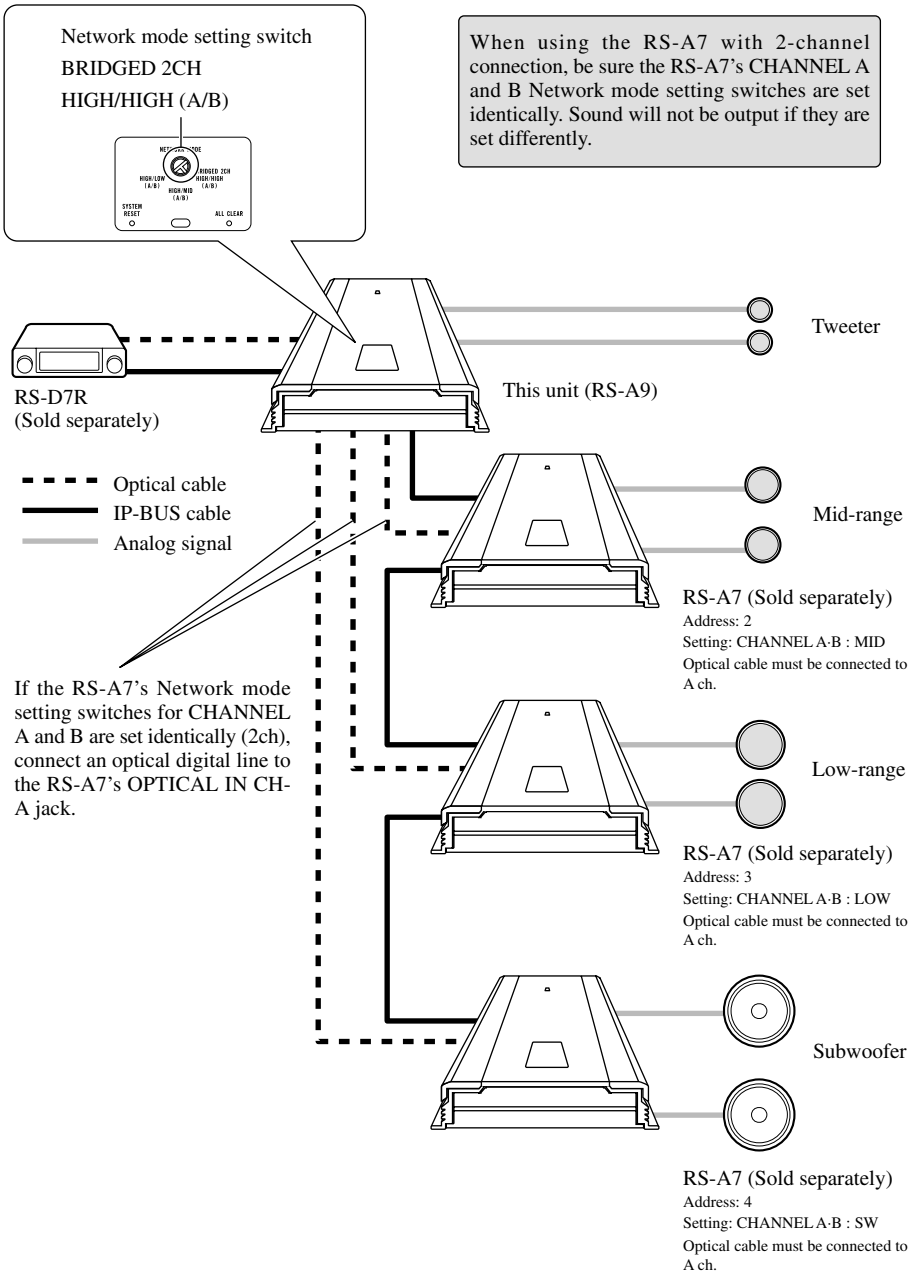
Example of 2-way system connection with 1 RS-A9



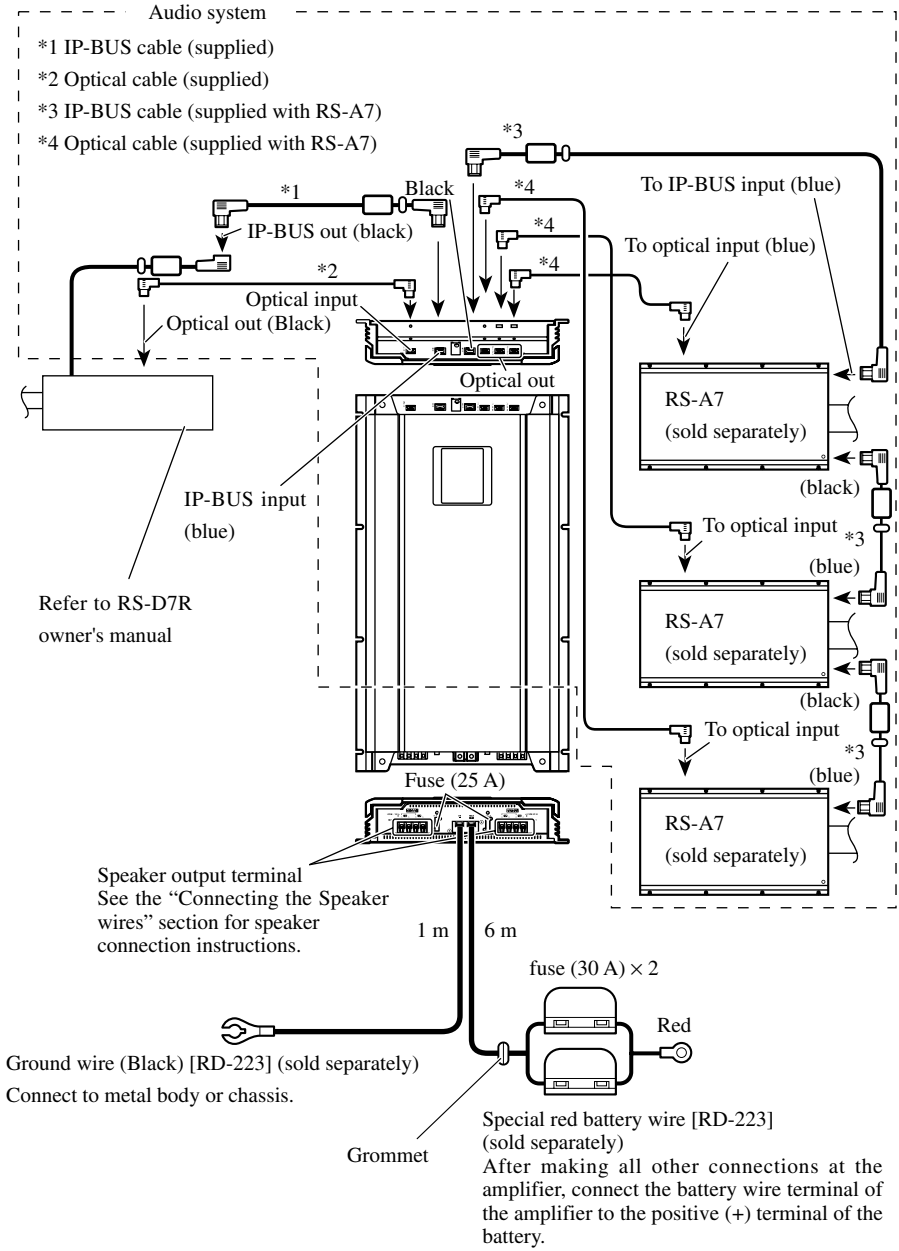
Example of 4-way system connection with 1 RS-A9 and 1 RS-A7



Example of 4-way system connection with 1 RS-A9 and 3 RS-A7s (Full-balanced pure digital system)



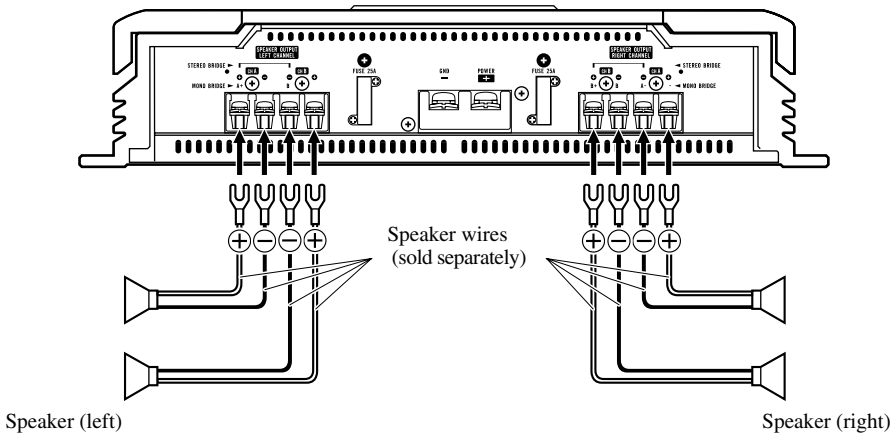
Connection Diagram



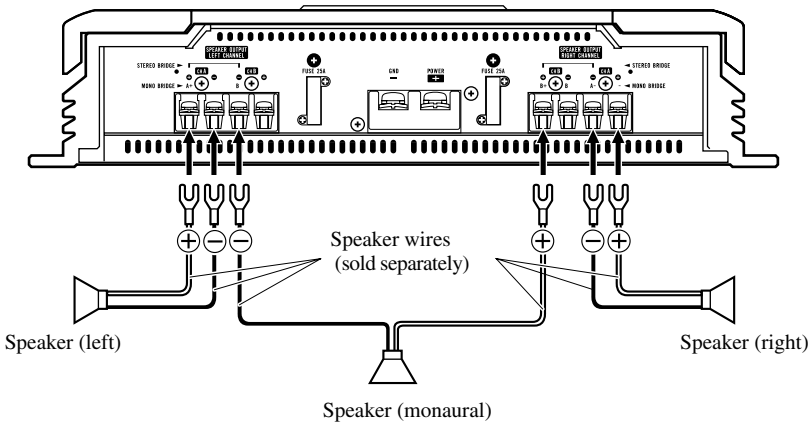
Connecting the Speaker wires

You can use this product for 4-channel, 3-channel and 2-channel speaker output. Speaker wire connection differs for each, so be careful to assure + and - polarity and left/right (L/R) connections are correct.

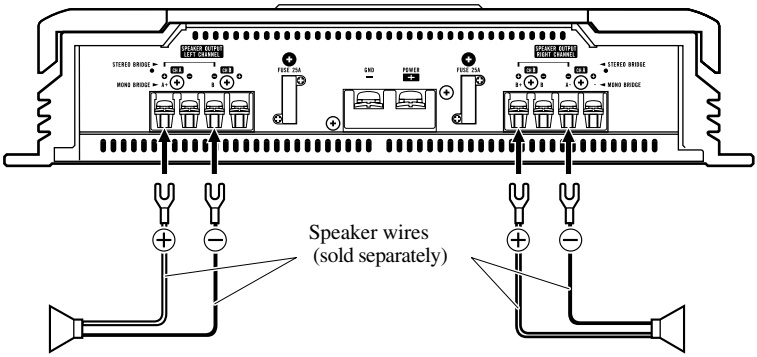
Four-channel mode



Three-channel mode



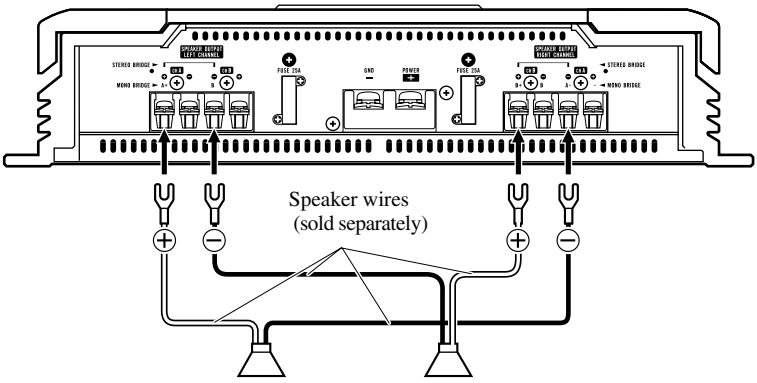
Two-channel mode (Stereo)



Speaker (left)

Speaker (right)

Two-channel mode (Mono)



Speaker (monaural)

Speaker (monaural)

To prevent damage

- Do not ground the speaker wire directly or connect a negative (–) lead wire for several speakers.
- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck or bus, check the battery voltage.
- If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.
- If the system remote control wire of the amplifier is connected to the power terminal through the ignition switch (12 V DC), the amplifier will always be on when the ignition is on— regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idling.
- Speakers to be connected to the amplifier should conform with the standards listed below. If they do not conform, they may catch fire, emit smoke or become damaged. The speaker impedance must be 2 to 8 ohms. But in case of two-channel and other bridge connections, the speaker impedance must be 4 to 8 ohms.
- Install and route the separately sold battery wire as far away as possible from the speaker wires. Install and route the separately sold battery wire, ground wire, speaker wires and the amplifier as far away as possible from the antenna, antenna cable and tuner.

- Cords for this product and those for other products may be different colors even if they have the same function. When connecting this product to another product, refer to the supplied manuals of both products and connect cords that have the same function.

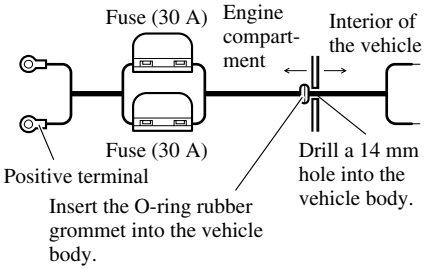
Speaker Channel	Speaker Type	Power
Four-channel (4Ω)	Low/High or Mid/High	Nominal input: Min. 50 W Max. input: Min. 100 W
Four-channel (2Ω)	Low/High or Mid/High	Nominal input: Min. 75 W Max. input: Min. 150 W
Two-channel (4Ω)	High	Nominal input: Min. 150 W Max. input: Min. 300 W

Connecting the Power Terminal

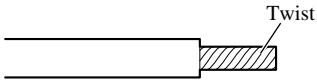
- Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the battery wire directly to the car battery positive terminal (+) and the ground wire to the car body.

1. Pass the battery wire from the engine compartment to the interior of the vehicle.

- After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.

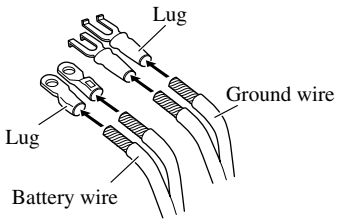


2. Twist the battery wire and ground wire.



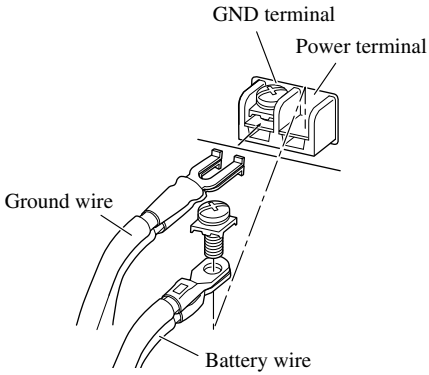
3. Attach lugs to wire ends. Lugs not supplied.

- Use pliers, etc., to crimp lugs to wires.



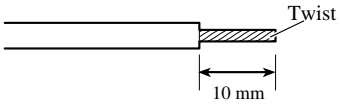
4. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.

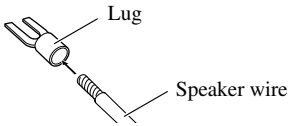


Connecting the Speaker Output Terminals

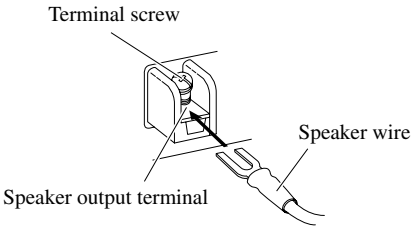
1. **Expose the end of the speaker wires using nippers or a cutter by about 10 mm and twist.**



2. **Attach lugs to speaker wire ends. Lugs not supplied.**
   - Use pliers, etc., to crimp lugs to wires.



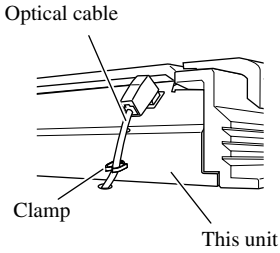
3. **Connect the speaker wires to the speaker output terminals.**
   - Fix the speaker wires securely with the terminal screws.



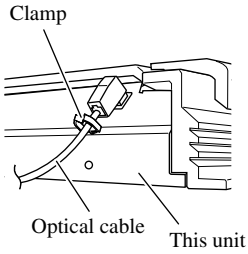
Secure the optical cable

Secure the optical cable using the supplied clamp as shown below.

- **When the optical cable is routed under the board.**

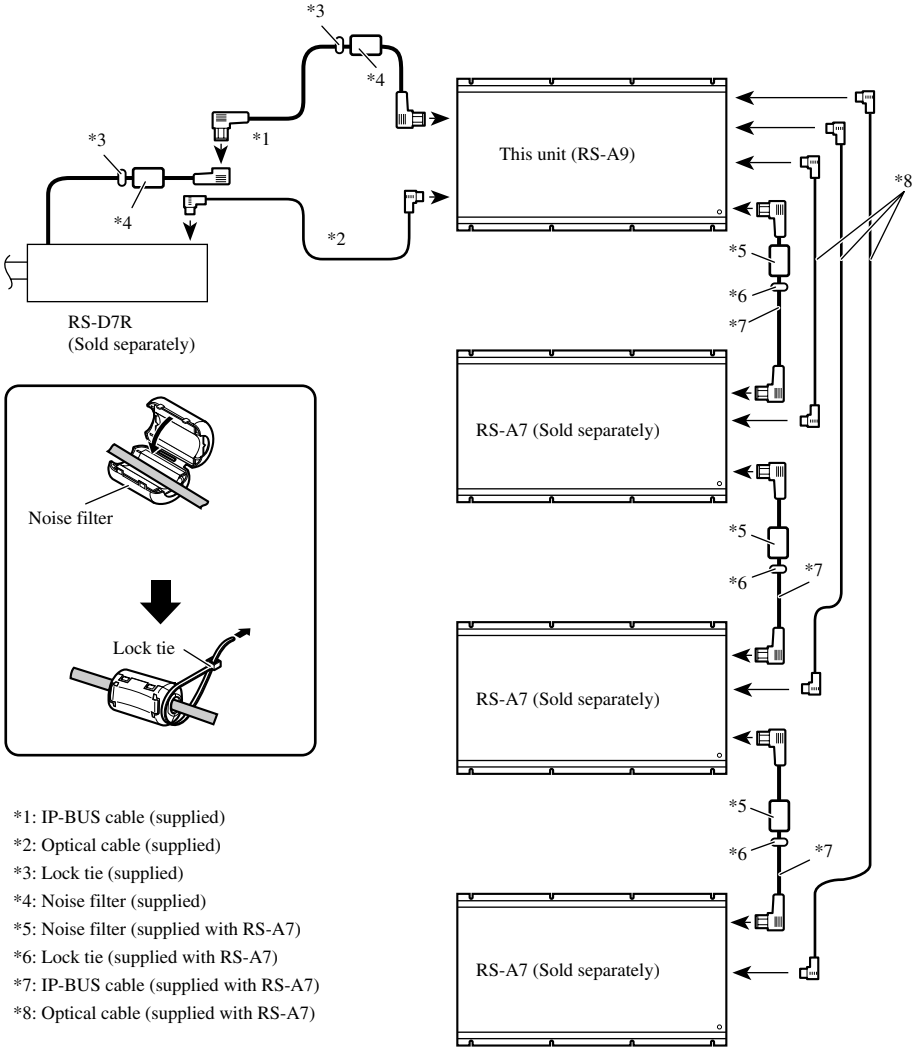


- **When the optical cable is routed on the board.**



Attaching the Noise Filter

To prevent the noise, use the supplied noise filter correctly.



*1: IP-BUS cable (supplied)
*2: Optical cable (supplied)
*3: Lock tie (supplied)
*4: Noise filter (supplied)
*5: Noise filter (supplied with RS-A7)
*6: Lock tie (supplied with RS-A7)
*7: IP-BUS cable (supplied with RS-A7)
*8: Optical cable (supplied with RS-A7)

CAUTION

- Do not install in:
  —Places where it could injure the driver or passengers if the vehicle stops suddenly.
  —Places where it may interfere with the driver, such as on the floor in front of the driver's seat.
- Make sure that wires are not caught in the sliding mechanism of the seats, resulting in a short-circuit.
- Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Protect all cables and important equipment such as fuel lines, brake lines and electrical wiring from damage.
- Install tapping screws in such a way that the screw tip does not touch any wire. This is important to prevent wires from being cut by vibration of the car, which can result in fire.
- To prevent electric shock, do not install the amplifier in places where it might come in contact with liquids.
- To ensure proper installation, use the supplied parts in the manner specified. If any parts other than the supplied ones are used, they may damage internal parts of the amplifier, or they may become loose causing the amplifier to shut down.

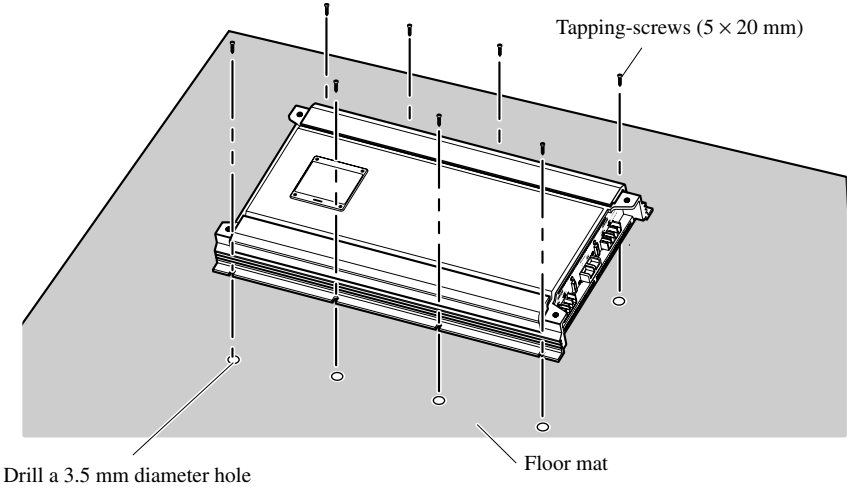
To prevent malfunction

- To ensure proper heat dissipation of the amplifier, be sure of the following during installation.
  —Allow adequate space above the amplifier for proper ventilation.
  —Do not cover the amplifier with a floor mat or carpet.
- Do not install the amplifier near a door where it may get wet.
- Do not install the amplifier on unstable places such as the spare tire board.
- The best location for installation differs with the car model and installation location. Secure the amplifier at a sufficiently rigid location.
- Make temporary connections first and check that the amplifier and the system operate properly.
- After installing the amplifier, confirm that the spare tire, jack and tools can be easily removed.

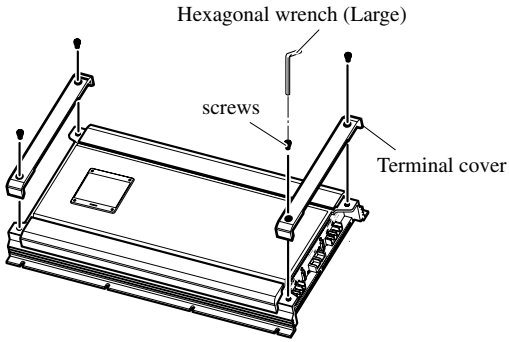
Installing the Unit

1. Install this unit to the vehicle.

- Never install this unit directly to the chassis.



2. Attach the terminal cover to prevent short circuit.



When an error occurs, locate the cause according to the list below. In most cases, the problem is incorrect connections or settings.

1. **Double check the connections and settings using the Checklist.**
2. **If connections and settings are correct, press the system reset button.**
   Refer to "System Resetting" on page 7.
3. **If the malfunction continues even after pressing the system reset button, press the all clear button.**
   Refer to "All Clear" on page 8.
   • Before pressing the all clear button, be sure to consult with your dealer.
4. **If the malfunction continues even after pressing the all clear button, contact your dealer or nearest authorized Pioneer Service Station.**

Checklist

Symptom	Cause	Remedy	Page
No Operation	The battery is not connected.	Connect the battery.	——
	A red lead is not properly connected.	Connect all red leads to the battery terminal, supplied with constant power, regardless of the ignition switch position after running them through the vehicle's fuse unit.	61 65
	A black lead (ground) is not properly connected.	Firmly connect all the black leads to the vehicle (metal) body.	61 65
	The fuse is blown.	Remove the cause and replace with another fuse of the same rating.	61
	Incorrect connection.	Make sure all the connectors are properly connected.	58 ~ 67
Unnatural sound	The mode setting switches are incorrectly set.	Set the mode setting switches correctly, then press the system reset button.	56 ~ 57

Specifications

GENERAL

Power Source ..... DC 14.4 V (10.8 — 15.1 V allowable)
Grounding system ..... Negative type
Max. Current consumption
(Rated Power) ..... 31 A
(No signal)..... 5 A
Average Current consumption
(4 ch 4 Ω) ..... 12 A
(2 ch 4 Ω) ..... 16.5 A
Fuse ..... 25 A × 2
Dimensions ..... 330 (W) × 71 (H) × 585 (D) mm
Weight ..... 13 kg

DSP/PREAMP

Tone controls (parametric)
Bass frequency ..... 63 Hz, 100 Hz, 160 Hz, 250 Hz
Treble frequency ..... 4 kHz, 6.3 kHz, 10 kHz, 16 kHz
Gain ..... ±12 dB
31-band graphic equalizer (L/R independent)
Frequency ..... 20 Hz — 20 kHz, 1/3 oct.
Gain ..... ±12 dB (0.5 dB)
3-band parametric equalizer (L/R independent)
Frequency ..... 20 Hz — 20 kHz, 1/3 oct.
Gain ..... ±12 dB (0.5 dB)
Crossover network (L/R independent)
SUBWOOFER
..... HPF frequency: 20 Hz — 100 Hz, 1/3 oct.
..... LPF frequency: 40 Hz — 250 Hz, 1/3 oct.
..... Gain: +10 dB — –24 dB (0.5 dB)
LOW ..... HPF frequency: 25 Hz — 250 Hz, 1/3 oct.
..... LPF frequency: 250 Hz — 10 kHz, 1/3 oct.
..... Gain: 0 dB — –24 dB (0.5 dB)
MID ..... HPF frequency: 160 Hz — 10 kHz, 1/3 oct.
..... LPF frequency: 2 kHz — 20 kHz, 1/3 oct.
..... Gain: 0 dB — –24 dB (0.5 dB)
HIGH
..... HPF frequency: 1.6 kHz — 20 kHz, 1/3 oct.
..... LPF frequency: 8 kHz — 20 kHz, 1/3 oct.
..... Gain: 0 dB — –24 dB (0.5 dB)
Slope
..... PASS, –6, –12, –18, –24, –36, –48, –72 dB/oct.
.....(PASS: no pass HPF-High channel)
Phase ..... NORMAL/REVERSE
Time alignment
(H/M/L ch) ..... 0 — 192.5 cm (0.77 cm)
(SW ch) ..... 0 — 385 cm (1.54 cm)
Position adjustment
..... DISTANCE: 0 — 192.5 cm (0.77 cm)
..... Level: 0 — –30 dB (0.5 dB)
Sampling frequency ..... 44.1 kHz
Digital input ..... Optical input
Analog Output ..... Optical output (3 line)

POWER AMP

Max. power (14.4 V) ..... 100 W × 4/300 W × 2 (4 Ω)
Continuous power (14.4 V)
..... 50 W × 4/150 W × 2
(20 — 20 kHz, 0.02/0.02 % (4 Ω))
75 W × 4
(20 — 20 kHz, 0.02 % (2 Ω))
Frequency responce ..... 10 — 100 kHz, (–1, +0 dB)
Distortion ..... 0.002 % (1 kHz, 20 k LPF)
S/N ratio.....105 dB (IHF-A)
Separation.....80 dB (100 Hz — 10 kHz, 20 k LPF)
Slew rate .....100V/µ sec
Dumping factor.....150
Impedance .....4 Ω (2 — 8 Ω)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

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